

# **Ontario Hydro and Economic Development**

## **A Briefing Paper**

---

Prepared for the Ontario Ministry of Energy by  
Mark Eliesen, *Economic Consultant*, Ottawa, Ontario

February 1989



Ontario

Ministry  
of  
Energy

Energy leadership

For economic strength

Robert C. Wong  
Minister

### EXECUTIVE SUMMARY AND CONCLUSIONS

The objective of this project is to review the policies and programs of Ontario Hydro and to evaluate strategies for improving the utility's potential to stimulate economic activities in the Province of Ontario.

The paper thus provides an historical description and analysis of Ontario Hydro's past and current role in economic matters with an evaluation and comparison with the activities of other utilities in Canada.

In the context of possible future application to Ontario Hydro a detailed account is provided of the specific policies and procedures of Manitoba Hydro in the building of the Limestone Generating Station.

After an assessment of recent recommendations of the report by the Premier's Council, the following general observations and conclusions are suggested:

1. Ontario Hydro's performance in carrying out its mission for the people of Ontario has been judged to be good. Notwithstanding a lack of indigenous resources, such as abundant low cost hydro found in other provinces (Quebec, Manitoba, and British Columbia), the utility has managed to have an electricity rate structure for its residential and industrial customers that compares favorably both among utilities in Canada and in other parts of the industrial world. In addition, its reliability record in ensuring that residents of Ontario receive their electricity without major blackouts, brownouts, or other technical stoppages has been quite satisfactory.
2. The principle mandate of Ontario Hydro of providing reliable, safe, and economical electric power to the province must never be forgotten and becomes even more important given numerous factors impacting the economics of the future generation of electricity and the reliability of transmitting and distributing this



energy throughout the province. By ensuring the availability of power with a high degree of reliability at stable rates, Ontario Hydro will best facilitate economic development in the province of Ontario.

3. The review reconfirmed the importance of public power in the Province. Providing an essential service such as electricity, through a Crown or statutory corporation owned by the people of Ontario has ensured greater accountability and responsibility for the public good than if this service were provided by private shareholders.
4. The utility's operational activities play a significant role in the economic life of the province, especially in the purchase of goods and services. It is suggested that the "power at cost" principle can be broadly interpreted to allow Ontario Hydro to initiate certain economic development initiatives within its long term mandate. However, if government policy is to request the company to be used as a major instrument for economic growth which greatly impacts the cost of the utility's programs and policies, then this should be a charge attributed to the taxpayer and not the ratepayer of the province.
5. For certain areas of the province and for certain groups of citizens, there are more effective strategies and mechanisms for ensuring, within the long-term business sense of Ontario Hydro's activities, greater economic impact within the province. These include procurement policy and training and employment programs and their application on alternative directions now being considered in the construction of additional generating supplies. A number of recommendations have been outlined to enhance the participation and economic benefit of more residents of the province, particularly for those in the North and Eastern regions.

## TABLE OF CONTENTS

|                                                    | <u>Page</u> |
|----------------------------------------------------|-------------|
| LIST OF TABLES, CHARTS AND MAPS                    | i           |
| LIST OF APPENDICES                                 | iii         |
| CHAPTER 1 - INTRODUCTION                           | 1           |
| 1.1 BACKGROUND AND CONTEXT                         | 1           |
| 1.2 BRIEF HISTORY - ONTARIO HYDRO                  | 6           |
| CHAPTER 2 - PROVINCIAL ECONOMIC DEVELOPMENT        | 13          |
| 2.1 ROLE OF UTILITY - MANDATE                      | 13          |
| 2.2 PRICING POLICIES AND INDUSTRIAL DEVELOPMENT    | 20          |
| 2.3 RATES, RELIABILITY OF SUPPLY                   | 22          |
| 2.4 ECONOMIC IMPACT                                | 32          |
| - CAPITAL EXPENDITURES                             | 32          |
| - PROCUREMENT                                      |             |
| - RESEARCH AND DEVELOPMENT                         |             |
| - BUSINESS ACTIVITIES                              |             |
| CHAPTER 3 - EXPERIENCE OF OTHER CANADIAN UTILITIES | 48          |
| 3.1 QUEBEC HYDRO                                   | 48          |
| 3.2 BRITISH COLUMBIA HYDRO                         | 57          |
| 3.3 MANITOBA HYDRO                                 | 60          |
| 3.4 OTHER UTILITIES                                | 64          |
| CHAPTER 4 - THE MANITOBA EXPERIENCE                | 68          |
| - LIMESTONE GENERATING STATION                     |             |
| 4.1 STRUCTURE AND PROCESS                          | 69          |
| 4.2 TRAINING AND EMPLOYMENT                        | 71          |
| 4.3 PURCHASING AND BUSINESS OFFSETS                | 81          |
| CHAPTER 5 - REPORT OF THE PREMIER'S COUNCIL        | 90          |
| 5.1 THE NUCLEAR INDUSTRY                           | 91          |
| 5.2 ONTARIO HYDRO'S ROLE IN PROVINCIAL DEVELOPMENT | 94          |
| CHAPTER 6 - SUMMARY AND CONCLUSIONS                | 101         |
| 6.1 UTILITY MANDATE                                | 101         |
| 6.2 ECONOMIC ROLE                                  | 108         |
| APPENDICES                                         |             |

LIST OF TABLES, CHARTS AND MAPS

i

| <u>TABLES</u> |                                                                             | Page |
|---------------|-----------------------------------------------------------------------------|------|
| TABLE 1       | PUBLIC UTILITIES, CANADA, 1987                                              | 10   |
| TABLE 2       | ONTARIO HYDRO'S INSTALLED DEPENDABLE<br>PEAK CAPACITY                       | 11   |
| TABLE 3       | ONTARIO HYDRO'S ELECTRIC ENERGY<br>GENERATED                                | 12   |
| TABLE 4       | DARLINGTON PROJECT<br>SCHEDULE CHANGES (IN MONTHS)                          | 17   |
| TABLE 5       | DARLINGTON PROJECT - COST<br>ESTIMATE HISTORY                               | 17   |
| TABLE 6       | CANADIAN ELECTRICAL BILL COMPARISONS<br>- RESIDENTIAL                       | 23   |
| TABLE 7       | CANADIAN ELECTRICAL BILL COMPARISONS<br>- COMMERCIAL                        | 24   |
| TABLE 8       | NORTH AMERICAN RESIDENTIAL RATE<br>COMPARISON                               | 25   |
| TABLE 9       | INTERNATIONAL INDUSTRIAL RATE<br>COMPARISON                                 | 26   |
| TABLE 10      | WORLD NUCLEAR REACTORS - LIFETIME<br>PERFORMANCE                            | 28   |
| TABLE 11      | NUCLEAR PERFORMANCE - ONTARIO<br>HYDRO REACTORS                             | 29   |
| TABLE 12      | DISTRIBUTION SYSTEM SERVICE CONTINUITY<br>- CANADIAN UTILITIES 1985 TO 1987 |      |
| TABLE 13      | RELATIVE SIZE OF ONTARIO HYDRO'S<br>CAPITAL SPENDING                        | 33   |
| TABLE 14      | ONTARIO HYDRO - ANNUAL INVESTMENT IN<br>FIXED ASSETS                        | 34   |
| TABLE 15      | PURCHASES - ONTARIO HYDRO,<br>1978 TO 1987                                  | 37   |
| TABLE 16      | ONTARIO HYDRO FUEL PURCHASES, 1987                                          | 40   |
| TABLE 17      | RESEARCH AND DEVELOPMENT ACTIVITIES,<br>ONTARIO HYDRO RESEARCH DIVISION     | 43   |
| TABLE 18      | JOBS SUSTAINED BY HYDRO QUEBEC                                              | 50   |

CHARTS

|          |                                                                                                          | Page |
|----------|----------------------------------------------------------------------------------------------------------|------|
| CHART 1  | PERCENTAGE OF CANADIAN ECONOMIC<br>ACTIVITY ORIGINATING IN ONTARIO, 1987                                 | 2    |
| CHART 2  | PERCENTAGE OF DOMESTIC PRODUCT BY<br>INDUSTRY OF ORIGIN - 1986 ONTARIO,<br>CANADA, AND THE UNITED STATES | 3    |
| CHART 3  | NUMBER AND VALUE OF PURCHASES,<br>ONTARIO HYDRO 1978 TO 1989                                             | 36   |
| CHART 4  | ONTARIO HYDRO - TOTAL PURCHASE VALUE BY<br>POINT OF MANUFACTURE                                          | 39   |
| CHART 5  | ONTARIO HYDRO FUEL PURCHASES - BY<br>SOURCE, 1987                                                        | 40   |
| CHART 6  | NEW BUSINESS VENTURES DIVISION,<br>1985 TO 1987                                                          | 46   |
| CHART 7  | HYDRO QUEBEC, DEVELOPMENT LEVERS AND<br>JOB CREATION                                                     | 49   |
| CHART 8  | LIMESTONE GENERATION STATION<br>ON-SITE CONSTRUCTION WORKFORCE NEEDED                                    | 73   |
| CHART 9  | LIMESTONE TENDER CALL SCHEDULE                                                                           | 86   |
| CHART 10 | ONTARIO HYDRO - NEED DATES                                                                               | 103  |

MAP

|                                  |    |
|----------------------------------|----|
| MANITOBA HYDRO GENERATING SYSTEM | 69 |
|----------------------------------|----|

APPENDICES

## A. TERMS OF REFERENCE - MINISTRY OF ENERGY PROJECT

## B. CANADIAN UTILITIES - STATISTICAL COMPARISONS

|          |   |                                |
|----------|---|--------------------------------|
| TABLE 1  | - | TOTAL ASSETS                   |
| TABLE 2  | - | TOTAL REVENUES                 |
| TABLE 3  | - | NET INCOME                     |
| TABLE 4  | - | RESERVES                       |
| TABLE 5  | - | NET LONG-TERM DEBT             |
| TABLE 6  | - | % FOREIGN - LONG-TERM DEBT     |
| TABLE 7  | - | INTEREST COVERAGE              |
| TABLE 8  | - | DEBT/EQUITY RATIO              |
| TABLE 9  | - | INSTALLED GENERATING CAPACITY  |
| TABLE 10 | - | FIRM PEAK DEMAND               |
| TABLE 11 | - | ENERGY GENERATED AND PURCHASED |
| TABLE 12 | - | TOTAL NUMBER OF CUSTOMERS      |
| TABLE 13 | - | PROVINCIAL CREDIT RATINGS      |

## C. ELECTRICITY BILL COMPARISON

## D. WORLD POWER NUCLEAR REACTOR PERFORMANCE

## E. INTERGOVERNMENTAL AGREEMENT ON THE REDUCTION OF INTERPROVINCIAL BARRIERS TO TRADE RELATED TO GOVERNMENT PROCUREMENT.

F. NELSON/BURNTWOOD COLLECTIVE AGREEMENT  
LETTER OF AGREEMENT NO. 11

## G. CANADA - MANITOBA LIMESTONE TRAINING AGREEMENT

## H. MANITOBA HYDRO PURCHASING GUIDELINES

## I. ONTARIO HYDRO STRATEGY IMPLEMENTATION - D.S.P.S.

## J. LIST OF PERSONS INTERVIEWED

## CHAPTER 1

### INTRODUCTION

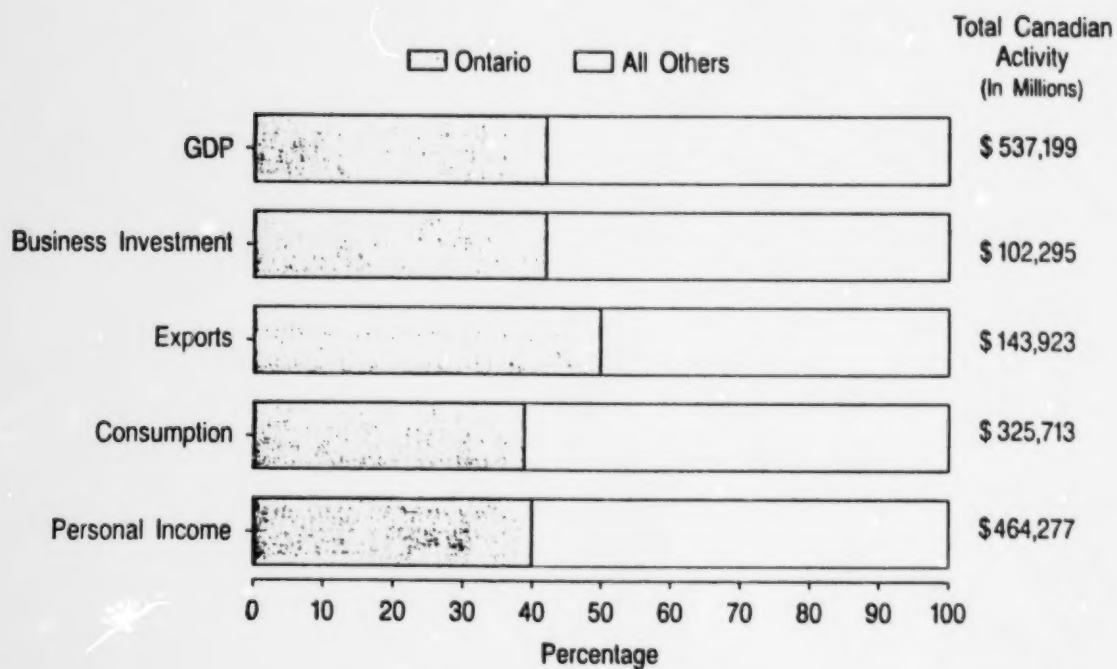
#### 1.1 Background and Context

It is generally agreed that the Province of Ontario's monopoly utility in the provision of electricity, Ontario Hydro, has played an important role in the economic development of the province.

With assets of about \$32 billion, annual revenues of over \$5 billion, and over 32,000 employees, the company generates, transmits and distributes electricity to all people in Ontario. Although its head office is located in Toronto, the utility also impacts the economies of most regions of the province with six regional and 47 area offices.

The Province of Ontario has a Gross Domestic Product of \$224.0 billion, (1987) representing about 42% of the Canadian Gross Domestic Product. An indication of the Province's importance in several areas of Canadian economic activity is given in Chart 1.

Ontario is the industrial heartland of Canada with the majority of Canadian industries being located in this province. As can be seen from Chart 2, the province shows a stronger concentration in manufacturing and a relatively smaller service sector than the rest of Canada or the United States.

**CHART 1****Percentage of Canadian Economic Activity Originating in Ontario — 1987**

Sources: Statistics Canada; Ontario Ministry of Treasury and Economics.



**CHART 2**

**Percentage Distribution of Domestic Product by Industry of Origin — 1986  
(1981 Prices)**



United States data on Government and Government Enterprises include data on government owned enterprises, while the Canadian data on Public Administration and Defence do not include data on enterprises which may be government owned, but which fall within other industrial classifications (e.g. electric utilities).

Sources: Statistics Canada; Conference Board of Canada; United States Department of Commerce.

There has always been considerable interest in the relationship between the utility and the desired objective of fostering and encouraging economic growth and employment throughout the province.

Because of Ontario Hydro's size and importance in providing a basic service to all residents of the Province, the company's activities have been and will continue to be a subject of intensive discussion and debate for public policy purposes.

This attention, it should be emphasized, is not unlike that directed at its sister utilities in other provinces who are in a similar public ownership position - a position which ensures more accountability for public dialogue and input than if ownership were in the hands of private shareholders.

By definition, the utility will always be a source of attention and controversy -- either by its action or by its lack of action.

One of the central parameters for such attention, as a matter of public policy, has been Ontario Hydro's role in economic development throughout the province. There is no doubt that it has always played a role in this area. However, the degree to which this has been effective, or should have been more effective for the management of industrial growth, remains a subject of debate and assessment.

Certain preliminary questions arise at the outset of such an assessment. In a summary way, what is the proper mandate for the provincial utility? Has its performance in implementing this mandate been satisfactory?

Should the utility play a more active role in economic development activities? In which sectors or regions? Can this 'enhanced' role be undertaken within the current legislative framework? Are there additional costs and who should pay for them -- the rate payer or the taxpayer? Are there any institutional changes which must be made if certain measures are required?

These and many more questions may be posed in investigating the interrelationship between the utility's traditional mandate of the generation and distribution of electricity and the utility's role in provincial economic development.

Surprisingly, given its widespread interest, very few analytical studies have been undertaken in the past in this area.

Ontario Hydro's broader role, its operations and activities, and its exact relationship with the Government of Ontario, were reviewed in some detail last with the publication of the Report of the Royal Commission on Electric Power Planning in 1980 (Porter Commission).

This Commission was established in 1975 to examine the long-range planning concepts of Ontario Hydro for the period 1983-1993 and beyond, and the matters related thereto. While two volumes of their report dealt with economic impacts of electric power planning (volumes 5 and 7), their analysis was limited in exploring the relationship between utility action, and economic growth.

An earlier non-analytical commentary was undertaken in 1971 with the establishment of 'Task Force Hydro' by the Committee on Government Productivity (C.O.G.P.).

It is not the intention of this discussion paper to review these earlier reports and their recommendations for comment--although where appropriate specific references will be made.

The terms of reference for this project are detailed in Appendix A.

Briefly it is intended "to review how Ontario Hydro's policies and programs will influence economic development in the province and to assess alternative strategies for better harnessing Hydro's potential to stimulate economic activity in the province".

The renewed and current interest in this topic arises in part out of public debate in Ontario on a detailed draft Demand/Supply Planning Strategy (D.S.P.S.) put forward by Ontario Hydro for review and discussion. This comprehensive paper outlines a proposed long-term demand supply scenario, and was adopted by the Ontario Hydro Board of Directors at their November 16, 1987 meeting as a reasonable basis for public review on the strategic directions Ontario Hydro should follow.

In the context of the above factors, it was thought both timely and useful to prepare a paper reviewing some previous and current activities of Ontario Hydro, and the experience of other jurisdictions, with regard to the relationship between utility operations and goals and provincial economic growth.

## **1.2 Brief History - Ontario Hydro**

The vast majority of companies providing electricity in Canada are provincial crown corporations owned solely by their respective governments and operating within the provincial jurisdiction on a monopoly basis. These include:

- British Columbia Hydro and Power Authority
- Saskatchewan Power Corporation
- Manitoba Hydro Electric Board
- Ontario Hydro
- Quebec Hydro
- New Brunswick Power Authority
- Nova Scotia Power
- Newfoundland and Labrador Hydro

Thus, other than the province of Alberta and some limited areas in the Atlantic area, provincial crown corporations are a fundamental characteristic in the provision of electricity to the people of Canada. This contrasts sharply with the United States, where electricity generation has operated primarily in the private sector, albeit in a regulated environment. In that country about seventy-five percent of electricity generated comes from privately - owned companies.

This characteristic, it will be shown later, is an extremely important factor as it relates to the subject matter of this discussion paper.

By legislation, the principle mission or mandate of these Canadian crown corporations, is to generate, transmit and distribute electricity to the customers of that province. For example, "Ontario Hydro's prime objective is to supply the people of Ontario with electricity at cost while maintaining high standards of safety and service. To that end, it operates 80 hydraulic, fossil and nuclear generating stations and an extensive power grid across Ontario to meet the province's demands for electric energy" (Ontario Hydro annual report 1987 p.2).

Ontario Hydro's historical mandate has always been to provide the people of Ontario with "power at cost". This did not evolve by accident: there were powerful economic and social circumstances that determined it.



At the turn of the century, Ontario's fledgling industries relied mainly on U.S. coal for energy. In 1902, the Pennsylvania coal mines were shut down by a bitter strike. Supplies were cut off and prices rose from \$3.50 to over \$7.00 a ton with some coal imported from Wales eventually selling at \$10.00 a ton.

This established an environment that led to the creation of Ontario Hydro. It was argued that the economy of Ontario had to be freed from reliance on foreign supplies of energy. This was reinforced with the fear that, with advances in the harnessing of hydro - electric power, American interests would move quickly to monopolize the development of Niagara Falls.

So a movement developed in Ontario for the concept of a publicly owned power system which would develop Niagara and make electricity available to everyone on an equal basis at cost. The creation in 1906 of what is now Ontario Hydro was stimulated thus by two major objectives - energy independence and energy price competitiveness.

Although some circumstances were different in other provinces, the creation of publicly owned companies to produce electricity at cost, also meant a policy of developing the provinces' own resources. By the 1960's, Ontario Hydro had utilized most of the economic large and medium scale hydro-electric sites; however, this situation does not exist in some of the other provinces, who still have vast resources of untapped hydro potential (British Columbia, Manitoba, Quebec and Newfoundland and Labrador).

The above past history, as will be discussed, was and still is, an important environmental factor related to provincial industrial development and economic growth.

Ontario Hydro, in part to avoid becoming once again reliant on imported coal, and also due to Canada's successful development of the CANDU reactor resulting in lower priced electricity, began the construction of nuclear generating facilities in the 1970's.

It is emphasized that the long-term philosophy of the corporation was to build capital-intensive rather than fuel-intensive generating stations. The capital costs of hydro-electric and nuclear stations are greater than those for alternatives like coal or oil or natural gas, but their negligible and lower fuelling costs can make them much more economic on a long-term basis.

Moreover the choice of hydro and then nuclear energy, did allow the utilization of some of Ontario's indigenous resources, creating jobs and ensuring reliability of supply with less vulnerability to the usually described "chaotic " foreign energy markets.

An important part of reviewing Ontario Hydro's part in the province's economic development will be to assess these past choices against both the utility's principle mandate and its electricity rates in the residential, industrial and commercial sectors of Ontario when compared to those other utilities in Canada and elsewhere in the world.

In addition it will be equally important to assess the availability and reliability of that electricity being generated and to compare the performance with others.

Canadian public utilities currently rank among the largest industrial corporations in Canada and among the largest electric utilities in North America. Their size and impact in terms of assets, revenues, and employees are reflected in the following table:



TABLE 1  
PUBLIC UTILITIES, CANADA, 1987

| <u>UTILITY</u>      | - (MILLION) - |                 | NUMBER           |
|---------------------|---------------|-----------------|------------------|
|                     | <u>ASSETS</u> | <u>REVENUES</u> | <u>EMPLOYEES</u> |
| Ontario Hydro       | 32,659        | 5,367           | 32,147           |
| Hydro Quebec        | 31,659        | 5,343           | 18,933           |
| B.C. Hydro          | 9,802         | 2,097           | 6,508            |
| Sask. Power         | 2,939         | 899             | 3,064            |
| N.B. Electric Power | 2,829         | 867             | 2,500            |
| Man. Hydro          | 3,240         | 614             | 3,853            |
| Nova Scotia Power   | 1,475         | 509             | 2,383            |
| Nfld. & Lab Hydro   | 2,147         | 354             | 1,309            |

Source: Annual Reports 1987

As can be seen, Ontario Hydro is the largest utility in Canada measured by assets and revenues. Tables 1 to 13 in Appendix B provide more detailed comparisons of the company with other Canadian utilities on a wide range of economic and financial indicators and measurements.

It may be helpful to briefly summarize Ontario's energy supplies and the place of Ontario Hydro within the province's energy sector.

In 1987, the composition of Ontario's primary energy consumption was: petroleum 33 percent, natural gas 23 percent, coal 13 percent, uranium 18 percent, hydro-generated electricity 12 percent, and others 2 percent. Approximately 38% or nearly two-fifths of total primary energy consumption was used in the manufacture of electricity.

Most of the natural gas and crude oil requirements are obtained from western Canada. Coal is obtained largely from the

United States but also increasingly from sources in the western provinces. Uranium is indigenous to Ontario but some supplies emulate from Saskatchewan. Finally most of the hydro energy is generated in the province with some purchases coming from Manitoba and Quebec.

In summary 32 percent of the primary energy is indigenous to Ontario (electricity-hydro and uranium), 57 percent is derived from western Canada (oil, gas, uranium) and 11 percent comes from the United States (coal).

The nature of Ontario Hydro's generation has obviously changed over time. Having harnessed most of the large-scale economic hydraulic sites available in the Province, the Corporation turned to fossil-fired generation in the 1950's and nuclear generation in the 1970's. It currently operates 68 hydraulic plants, eight fossil stations (with six in operation and 2 mothballed), and five nuclear stations, of which 4 are operational and 1 is under construction. The total installed dependable peak capacity is 30,080 megawatts.

As the following table shows, about 22 percent of capacity is hydraulic, 35 percent nuclear and 43 percent coal:

**TABLE 2**  
**ONTARIO HYDRO'S INSTALLED**  
**DEPENDABLE PEAK CAPACITY**

|           | %           |             |             |
|-----------|-------------|-------------|-------------|
|           | <u>1977</u> | <u>1982</u> | <u>1987</u> |
| Hydraulic | 31          | 27          | 22          |
| Nuclear   | 16          | 20          | 35          |
| Fossil    | 53          | 53          | 43          |

However, given the different fuel costs and operating abilities of the system, energy production is considerably higher from the nuclear source as is evidenced from the following table:

**TABLE 3**  
**ONTARIO HYDRO'S**  
**ELECTRIC ENERGY GENERATED**  
(% OF TOTAL ELECTRIC ENERGY GENERATED)

|           | 1983 | 1984 | 1985 | 1986 | 1987 |
|-----------|------|------|------|------|------|
| Hydraulic | 33   | 33   | 32   | 31   | 25   |
| Nuclear   | 35   | 35   | 42   | 49   | 50   |
| Fossil    | 32   | 32   | 26   | 20   | 25   |

When the Darlington Nuclear Station currently being constructed becomes operational in 1993 (3524 megawatts), the Ontario Hydro generation facilities will total about 32,400<sup>1</sup> megawatts. At that time the capacity mix will be 20% hydraulic, 43% nuclear and 37% fossil generation. Energy production reflecting the cost-efficiency of the nuclear plants, are forecasted to be 22% hydraulic, 61% nuclear and 17% fossil.

---

<sup>1</sup>. This total includes 2237 megawatts of oil-fired capacity at the Lennox Generating Station, which was moth-balled in the early 1980's but brought back into service in 1987 to meet short term peak power demand and maintain system reliability.

## CHAPTER 2

### PROVINCIAL ECONOMIC DEVELOPMENT

#### 2.1 Role of Utility - Mandate

The principle mission or mandate of publicly owned electricity utilities in Canada is stated to be the generation, transmission and distribution of electricity to the customers of that province.

It is clear that the important functions and activities of the utility play an important role in the economy of that jurisdiction. However, it has been articulated over time that as a provincial statutory corporation, there is an important role to play to encourage economic growth and development within the provincial boundaries.

In the Province of Ontario, Ontario Hydro under the general authority of the Power Corporation Act, has broad powers to generate, supply, and deliver electricity. Its prime objective is to supply the people of Ontario with electricity at cost while maintaining high standards of safety and service.

Section 75 of the Power Corporation Act is usually cited as the specific source requiring Ontario Hydro to supply "power at cost" to municipalities in the province. The section states:

"75 Notwithstanding anything in any general or special Act passed before the 3rd day of April, 1928, or in any contract entered into before the 3rd day of April 1928, and except where under the terms of any such contract power is to be supplied to a municipal corporation is the cost to the corporation, as determined by it, of supplying and delivering power to the municipal corporation, including the municipal corporation's proportion, as adjusted by the Corporation, of,

- (a) The cost of operation, maintenance, depreciation and insurance of the works and the cost of administration of the corporation;
- (aa) The cost of an energy conservation program;
- (ab) The difference in the revenue of the Corporation mentioned in section 90a;
- (b) Interest and expenses of debt services and interest credited on the balances remaining from time to time at the credit of reserve accounts established under this Act;
- (c) An annual sum sufficient to form in forty years, with interest at 4 percent per year, a sinking fund for the repayment of the advances made by the Province of Ontario under this Act for the cost of the works, for the repayment of any other indebtedness incurred or assumed by the Corporation in respect of the cost of the works and the restoration of any reserve or other funds of the Corporation utilized for the payment of the cost of the works; and
- (d) An amount to be determined by the Corporation for the purposes of sections 13 and 15 and clause 14(1) c. RS.0 1980, c. 384, s.75; 1981, c.16, s7; 1981, c.41, s1.

In part, the purpose of spelling out the details of the "power at cost" section of the Power Corporation Act, is to reflect the intent of this principle which has been subject to some discretion in interpretation.

When the Government of Ontario in 1981 wanted Ontario Hydro to implement energy conservation programs, it was deemed necessary to amend the Power Corporation Act because it was



interpreted that the cost of those programs could not be added to the cost of power without such an amendment.

Similarly, another amendment was deemed necessary to allow Ontario Hydro to recover any additional costs arising out of the Rural Rate Differentiation Program. The utility had interpreted the Power Corporation Act as prohibiting any rate cross subsidization programs affecting residential, commercial or industrial customers. But because of Government of Ontario policy, an amendment was provided to ensure that the average rural residential hydro bill should be no more than 15 percent above the weighted average municipal bill.

On the other hand, a limited number of policies and programs principle, have been adopted, which provide a wider latitude in the interpretation of the "power at cost" principle articulated as Ontario Hydro's *raison d'être*.

These could include the following:

(1) Procurement Policy - It is the corporate goal to provide electric service to the Ontario community at the lowest overall long-term cost. Yet a preferential price premium of up to 10 percent is provided to domestic (Canadian) suppliers as opposed to foreign or off-shore suppliers. Furthermore a local content preference of up to 3 percent is permitted for regional-based purchasing within Ontario. (Source: Ontario Hydro Purchasing Policies and Procedures Manual - Supply Division, Policy Section, p.3).

(2) Rate Discounts-Development - Ontario Hydro maintains it is prohibited by statute from using rates as a development tool, for example, to provide special rates in a given area in Northern Ontario to attract industry. However in the early history of the company, such 'special' discount rates existed in Ontario (particularly in the Niagara region)



where cheaper or discount rates were provided to attract chemical and building material industries which at that time were relatively heavier users of electricity.

In addition, a 'costing by wire' rate policy was in effect in Ontario up to about 1965 by which industrial rates were provided depending on the firm's locational proximity to the generating station. For example, Cyanamid Canada Inc. established a nitrogen plant in Courtright not very far from the Lambton generating station. While not necessarily at odds with "power at cost" this is a finer allocation of costs which illustrates the arbitrary nature on some cost allocations.

(3) Darlington Project - Since the initial announcement of the construction of the Darlington nuclear generating station, there have been a number of schedule changes, delaying or accelerating the construction program. While some changes have been due to internal Ontario Hydro policy, others have been inspired as a result of Government of Ontario policies. The result of those policies which were accepted by Ontario Hydro (without any legislative amendments to the Power Corporation Act) significantly increased the estimated costs of the Darlington project. This is reflected in the following tables:

TABLE 4  
DARLINGTON PROJECT  
SCHEDULE CHANGES (IN MONTHS)

| UNIT | 1979<br>DELAY | 1980<br>DELAY | 1981<br>ADVANCE | 1982<br>DELAY | TOTAL<br>DELAY |
|------|---------------|---------------|-----------------|---------------|----------------|
| 1    | 18            | 18            | 6               | 0             | 30             |
| 2    | 18            | 18            | 6               | 0             | 30             |
| 3    | 30            | 12            | 12              | 24            | 54             |
| 4    | 30            | 12            | 12              | 24            | 54             |

Source: Ontario Hydro

TABLE 5  
DARLINGTON PROJECT - Cost Estimate History (\$ billion)

|                       |         |
|-----------------------|---------|
| 1978 Release Estimate | \$ 5.0  |
| 1985 Current Estimate | \$ 10.9 |

Changes

|                          |            |
|--------------------------|------------|
| Schedule Changes         | \$ 2.3     |
| Economic Changes         | .8         |
| Financial Policy Changes | 1.2        |
| Scope Changes            | <u>1.6</u> |
|                          | \$ 5.9     |

The above shows an estimated \$2.3 billion or nearly 40 percent of the increased costs for the Darlington Nuclear station, to be attributed to changes in the construction schedule which derived from the Ontario Government's general fiscal policy of accelerating or decelerating capital expenditures in the economy of the province. (The most recent estimate on the Darlington station is \$11.625 billion).

(4) Project Financing - Ontario Hydro's debt is guaranteed by the Province of Ontario and therefore a more expensive form of financing, such as project financing, is not required. In 1978, Ontario Hydro arranged a 15 - year contract with Thunder Bay Terminals Ltd. for the construction and operation of a coal terminal facility on Lake Superior to help guarantee a supply of the fossil fuel from Western Canada. The cost to Ontario Hydro of handling coal includes an interest and principal component payable directly to the bond holders. Ontario Hydro, therefore, effectively guarantees the servicing of the debt incurred by Thunder Bay Terminals - a private company - to construct the facilities. It can be argued that the above project financing arranged by Ontario Hydro is outside its normal line of business of providing "power at cost".

(5) Elliott-Lake - Ontario Hydro also has used project financing to secure a reliable source of uranium for its nuclear generating stations. The corporation advanced funds to Dennison Mines Ltd. toward completing the necessary production capacity at its Elliott Lake operations, which were then applied as credits against future deliveries of fuel. Whether or not this activity is within a "power at cost" mandate, there is a broader issue related to the operations of Ontario Hydro and its overall responsibility for socio-economic environment of the Province of Ontario. Before discovery of rich and cheaper uranium finds in Saskatchewan, the utility had placed long-term contracts

with supplies coming from Northern Ontario. It is currently acknowledged by Ontario Hydro senior management that while attempts are being undertaken to minimize long-term costs, a contributing factor in these decisions is the corporation's responsibilities in employment and the regional impact in Northern Ontario.

In summary, it can be stated that the core mandate of Ontario Hydro, which is applied generally, is to provide electricity efficiently, reliably, and safely, - and to supply it at cost. At times the precise measurement of these costs has included a corporate social responsibility as a cost of doing business towards both the general community, and to specific regions of the province.

In theory, the relationship between Ontario Hydro and the Government of Ontario is relatively clear where the government establishes energy policy for the province and where, under the Power Corporation Act, Ontario Hydro delivers an effective electricity system within that energy policy framework. Unless there are specific changes in the Act, any major costs associated with an overall government policy directive should be the responsibility of the taxpayer as opposed to the rate payer.

It is noted that recent amendments introduced in the Ontario Legislature dealing with the proposed Free-Trade agreement between Canada and the United States, would allow the Cabinet of Ontario to authorize the utility to undertake economic development initiatives in specified areas of the province.

It is further understood that additional amendments to the Power Authority Act are forthcoming shortly, elaborating and providing greater precision in the relationship between the utility and its owners, the people of Ontario - through the Government of Ontario.

## 2.2. Pricing Policies and Industrial Development

Ontario Hydro has always played a role and will continue to play a role in economic development. The provision of low-cost reliable electricity is generally regarded as a basic economic underpinning for continued growth.

As referred to earlier, the utility's impact as a result of its operations and activities in areas such as procurement and research and development, have had a significant impact on the economic life of the province. These will be examined later on.

Also statistical indicators will be provided reflecting benefits associated with the capital expenditure program of the company which is obviously enhanced by the high Ontario economic content. But it is not accurate to suggest-as many have done in the past and will continue to do in the future - that the utility represents "one of the most powerful instruments of economic policy open to the Ontario government" (Staff study of the Poster Commission - Volume 5).

Other than certain minor exceptions, in which it can be interpreted as resulting in a contravention of the Power Corporation Act, Ontario Hydro has not been called upon to support the provincial government's fiscal policies affecting cyclical behavior. The timing of bringing on major generating stations for power supply, has not, and should not be a function related to short-term cyclical behaviour. If such action were contemplated in the future then those costs associated with such utility pump priming should be properly accounted for and be made the responsibility of the government, as opposed to that of the utility.

The history of Ontario has shown that the initial low cost and high reliability of hydroelectric power were major determinants for primary and fabricating industries to locate in the province. This was certainly true for a number of electro-



process industries at the Niagara Falls region which was a major generating source.

With the rapid changes that have occurred in transportation, in technology, and trade policies, decisions to locate industrial plants are independent of the siting of generating stations.

In all but a very small number of industries, electricity is a small cost component of the total cost of operations. More significant factors in attracting firms to specific areas include markets and their size, availability of transportation, infrastructures, tax and tariff regimes, and skilled labour markets.

Ontario as an industrial centre was chosen because of ready access to large markets in central Canada and the United States and favorable trade policies. It is generally acknowledged that the price of electricity has not been a key consideration in the location for most firms and industries in the province.

As the Porter Commission on Electric Power Planning observed:

"...the price of electricity is unlikely to be a significant factor in the choice of location of a production facility except perhaps in the case of very highly electricity-intensive industries. On the other hand, reliable service is a prerequisite for a broad range of companies - a characteristic that Ontario shares with many other jurisdictions in Canada and the United States. Although a reliable and comparatively inexpensive supply of electricity is a necessary precondition to the establishment of a balanced industrial development programme, this factor alone does little to foster this development" (P148)

Notwithstanding repeated and continuous urgings from many special interests, Ontario Hydro has never instituted a preferential industrial rate discount program for regional



development purposes. Clearly this would involve cross-subsidization among the utility's customers and would go against power at cost in which rates are based on average costs of the system. The case for subsidization of industrial power rates for regional development purposes is not supported by available economic evidence. However if such programs are instituted then such costs should be charged to government and not to the utility.

### **2.3 Rates, and Reliability of Supply**

It has been stated that Ontario Hydro's primary goal is to provide safe, reliable, and economical power to the province.

The importance of this central mandate can not be overestimated, since it is in these areas that the utility can make its most substantial contribution to the economic growth and development of the province.

#### **Electric Rates - Bill Comparisons**

The following tables provide electrical bill comparisons for the major cities and provinces in Canada.

Ontario shows up very favorably since the only systems in Canada that have lower comparable rates are those endowed with extensive hydraulic resources, such as Manitoba, Quebec and British Columbia, or endowed with indigenous fossil fuels, such as Alberta:

**TABLE 6**  
**CANADIAN ELECTRICAL BILL COMPARISONS - RESIDENTIAL**

Residential - For One Month

Cities: Population greater than 80 000

Consumption: 750 kW.h

|                   |         |
|-------------------|---------|
| Halifax, N.S.     | \$56.44 |
| St. John's, Nfld. | 54.76   |
| St. John, N.B.    | 47.38   |
| Saskatoon, Sask.  | 46.92   |
| Thunder Bay, Ont. | 44.08   |
| Toronto, Ont.     | 43.47   |
| Regina, Sask.     | 42.65   |
| Vancouver, B.C.   | 42.15   |
| Edmonton, Alta.   | 41.25   |
| Calgary, Alta.    | 39.97   |
| Montreal, P.Q.    | 34.81   |
| Winnipeg, Man.    | 34.36   |

Cities: Population less than 80 000

Consumption: 750 kW.h

|                       |         |
|-----------------------|---------|
| Sydney, N.S.          | \$56.44 |
| Corner Brook, Nfld.   | 54.76   |
| Charlottetown, P.E.I. | 54.57   |
| Moncton, N.B.         | 53.05   |
| Belleville, Ont.      | 42.80   |
| Moose Jaw, Sask.      | 42.65   |
| Grand Prairies, Alta. | 41.50   |
| Vernon, B.C.          | 42.15   |
| Brandon, Man.         | 37.15   |
| Drummondville, P.Q.   | 34.81   |
| Medicine Hat, Alta.   | 31.25   |

Source: Rates Dept. April Annual Report

Note: All bills calculated by the appropriate Utility as  
of 87 05 01.

**TABLE 7**  
**CANADIAN ELECTRICAL BILL COMPARISONS - COMMERCIAL**

Power - For One Month

Standard\*: Consumption: 25 000 kW.h

|                             |            |
|-----------------------------|------------|
| Nova Scotia Power Corp.     | \$2 208.70 |
| New Brunswick Power         | 2 006.30   |
| Maritime Electric, P.E.I.   | 1 844.21   |
| Newfoundland/Labrador Power | 1 769.33   |
| Saskatchewan Power Corp.    | 1 724.95   |
| Toronto Hydro, Ont.         | 1 717.65   |
| Transalta Utilities, Alta.  | 1 687.97   |
| Alberta Power Ltd.          | 1 568.91   |
| Hydro-Quebec                | 1 506.60   |
| B.C. Hydro                  | 1 332.85   |
| Manitoba Hydro              | 1 148.81   |

\*Utility owned transformation. Service at 750 Volts or less.

Primary\*\*: Consumption: 400 000 kW.h

|                             |             |
|-----------------------------|-------------|
| Nova Scotia Power Corp.     | \$23 057.06 |
| Maritime Electric, P.E.I.   | 22 367.94   |
| Newfoundland/Labrador Power | 22 100.85   |
| Saskatchewan Power Corp.    | 21 447.99   |
| New Brunswick Power         | 20 450.00   |
| Toronto Hydro, Ont.         | 19 528.65   |
| Hydro-Quebec                | 17 322.60   |
| Transalta Utilities, Alta.  | 17 042.19   |
| B.C. Hydro                  | 16 071.30   |
| Alberta Power Ltd.          | 15 363.69   |
| Manitoba Hydro              | 13 010.90   |

\*\*Customer owned transformation.

Source: Rates Dept., April Annual Report

Note: All bills calculated by the appropriate Utility as of 87  
05 01.

Furthermore, as Appendix C shows, in an international survey of major cities and developed countries of the world, Canada (and Ontario) continue to have the lowest electricity bills at all consumption levels - residential and industrial.

In summary, Table 8 outlines a North American rate comparison for residential customers with 1,000 kilowatt of monthly consumption:

**TABLE 8**  
**NORTH AMERICAN RESIDENTIAL RATE COMPARISON, 1987**

- \$ Canadian -

|                  |     |
|------------------|-----|
| Winnipeg         | 43  |
| Montreal         | 44  |
| Calgary          | 50  |
| Vancouver        | 53  |
| Toronto          | 56  |
| Portland, Oregon | 65  |
| T.V.A. - RL-L    | 74  |
| Louisville       | 89  |
| Birmingham       | 92  |
| Atlanta          | 94  |
| Dallas           | 95  |
| Los Angeles      | 101 |
| Tampa            | 103 |
| Washington D.S.  | 109 |
| Detroit          | 119 |
| Boston           | 134 |
| New York         | 180 |
| Chicago          | 221 |

Source: Survey Ontario Hydro, 1987

And for the industrial customers Table 9 shows a comparison on rates for those with a monthly demand of 10,000 kW.:

**TABLE 9**  
**INTERNATIONAL INDUSTRIAL RATE COMPARISON, 1986**  
**- \$ Canadian -**

|                     |     |
|---------------------|-----|
| Winnipeg            | 149 |
| Calgary             | 189 |
| Vancouver           | 186 |
| Montreal            | 191 |
| Toronto             | 195 |
| Sweden              | 251 |
| Italy               | 295 |
| France              | 335 |
| T.V.A. - U.S.A.     | 344 |
| England             | 383 |
| Detroit, U.S.A.     | 424 |
| Spain               | 487 |
| Los Angeles, U.S.A. | 487 |
| Boston, U.S.A.      | 545 |
| Chicago, U.S.A.     | 528 |
| Tokyo, Japan        | 535 |
| New York, U.S.A.    | 606 |

Source: Survey - Ontario Hydro, 1987

### Reliability

As noted earlier, Ontario Hydro has a diversified electric generating system with hydraulic capacity at 22 percent, coal or fossil fuel capacity at 43 percent, and nuclear capacity at 35 percent.

However because of the operating characteristics of the system which relate to seasonal demand and the economics of base load and peak power systems, nuclear electric energy generated, accounted for about 50 percent of the total system and is forecasted at 61 percent in 1993 when the Darlington project has become completed and fully operational (Hydraulic energy is forecasted at 22 percent with coal at 17 percent).

This reflects the high performance of the nuclear generating system in Ontario in operational capacity terms - measured as a reactors operating performance as a percentage of its total production if it ran at full power without interruption.

In terms of lifetime performance to the end of 1989, Ontario Hydro had ten units in the world upper decile, with five in the first six (First place was occupied by Pont Lepreau, a Candu HWR unit in New Brunswick). The following table shows the gross capacity factor percentage for these nuclear units by country:



TABLE 10WORLD NUCLEAR REACTORS - LIFETIME PERFORMANCE

| Country       | Unit             | Nominal<br>MCR (G)<br>(MWE) | Years in<br>Service | Reactor<br>Type* | Gross<br>Capacity**<br>Factor % |
|---------------|------------------|-----------------------------|---------------------|------------------|---------------------------------|
| 1. Canada     | Pt. Lepreau      | 680                         | 4                   | HWR              | 87.5                            |
| 2. Canada     | Pickering - 7    | 540                         | 3                   | HWR              | 87.3                            |
| 3. Canada     | Bruce - 3        | 904                         | 9                   | HWR              | 86.9                            |
| 4. Canada     | Pickering - 8    | 540                         | 1                   | HWR              | 86.8                            |
| 5. Canada     | Bruce - 6        | 890                         | 3                   | HWR              | 86.2                            |
| 6. Canada     | Bruce - 7        | 890                         | 1                   | HWR              | 85.6                            |
| 7. W. Germany | Philippsburg - 2 | 1350                        | 2                   | PWR              | 85.4                            |
| 8. W. Germany | Grohnde A-1      | 1365                        | 2                   | HWR              | 85.7                            |
| 9. W. Germany | Bruce - 4        | 904                         | 8                   | PWR              | 84.1                            |
| 10. Canada    | Tihange          | 1048                        | 2                   | HWR              | 82.9                            |

\*MWe refers to megawatts electrical.

One megawatt is 1,000 kilowatts, or 1,000,000 watts.

Nominal MCR(G) (MW) refers to nominal maximum gross capacity rating expressed in megawatts.

From first electricity to December 31, 1987.

PWR Pressurized Water Reactor  
HWR Heavy Water Reactor (CANDU)

Source: Ontario Hydro

The following table shows the performance of all of Ontario Hydro's nuclear units:

**TABLE 11**  
**NUCLEAR PERFORMANCE - Ontario HYDRO REACTORS**

| <u>Units</u>     | <u>Gross Capacity Factor (1)</u> | <u>World Rank (2)</u> |
|------------------|----------------------------------|-----------------------|
| Pickering - 7    | 87.5                             | 2                     |
| Bruce - 3        | 86.9                             | 3                     |
| Pickering - 8    | 86.8                             | 4                     |
| Bruce - 6        | 86.2                             | 5                     |
| Bruce - 7        | 85.6                             | 6                     |
| Bruce - 4        | 84.7                             | 9                     |
| Bruce - 5        | 84.0                             | 12                    |
| Pickering - 4    | 82.1                             | 16                    |
| Bruce - 1        | 80.4                             | 21                    |
| Pickering - 5    | 79.6                             | 27                    |
| Pickering - 6    | 79.3                             | 27                    |
| Pickering - 3    | 77.4                             | 40                    |
| Bruce - 2        | 71.9                             | 70                    |
| Pickering - 1(3) | 61.5                             | 146                   |
| Pickering - 2(3) | 60.8                             | 150                   |

- (1) Gross Capacity Factor is defined as the total energy that a station actually produced after accounting for outages and underratings divided by the energy at its gross maximum continuous rating. The performance of these units is based on their lifetime performances to the end of 1987.
- (2) Ontario Hydro's comparison to all western world nuclear generating units of at least 500 MW gross capacity and operating for at least one year (total of 236).
- (3) The Gross capacity Factor for Pickering units 1 and 2 has declined due to the current retubing program.

Further details on both the lifetime performance and 1986 performance of the worlds 236 large nuclear reactors are listed in Appendix D.

To the average Canadian citizen, the dependence on the electrical system is measured in the reliability of the transmission and distribution systems.

In that regard, the Canadian Electrical Association undertakes annual surveys to report on service continuity related to the Distribution System performance in Canadian electrical utilities.

As can be seen from the following table, Ontario Hydro's recent experience is very favorable to most of the other Canadian public utilities.

**TABLE 12**  
**DISTRIBUTION SYSTEM SERVICE CONTINUITY**  
**CANADIAN UTILITIES, 1985 TO 1987**

| UTILITY                                                | SYSTEM AVERAGE<br>INTER. FREQ. INDEX (1) |      |      | SYSTEM AVERAGE<br>INTER. DURATION INDEX (2) |       |      |
|--------------------------------------------------------|------------------------------------------|------|------|---------------------------------------------|-------|------|
|                                                        | 1985                                     | 1986 | 1987 | 1985                                        | 1986  | 1987 |
| Newfoundland and<br>Labrador Hydro                     | 5.50                                     | 5.28 | 4.05 | 8.90                                        | 7.33  | 6.32 |
| Nova Scotia Power                                      | 3.93                                     | 4.55 | 4.58 | 5.11                                        | 6.46  | 6.09 |
| New Brunswick<br>Power                                 | 3.45                                     | 2.22 | 2.89 | 8.31                                        | 3.00  | 3.17 |
| Hydro Quebec                                           | N/A                                      | 5.08 | 5.56 | N/A                                         | 7.38  | 7.88 |
| Ontario Hydro                                          | 1.32                                     | N/A  | 1.27 | 4.22                                        | N/A   | 3.26 |
| Manitoba Hydro                                         | 1.25                                     | 1.28 | 1.15 | 1.54                                        | 1.41  | 1.37 |
| Sask. Power                                            | 3.27                                     | 2.90 | N/A  | 2.49                                        | 3.21  | N/A  |
| Transalta                                              | 3.90                                     | 4.25 | 3.34 | 4.52                                        | 12.64 | 4.68 |
| Alberta Power                                          | 3.15                                     | 3.52 | 4.17 | 3.79                                        | 4.59  | 6.66 |
| B.C. Hydro                                             | 1.39                                     | 0.88 | 1.14 | 3.16                                        | 2.32  | 2.83 |
| Total Average - For Total Canadian Utilities Reporting | 2.47                                     | 3.57 | 3.45 | 4.08                                        | 5.42  | 5.15 |

- 1) System Average Interruption Frequency Index - is defined as the average number of interruptions per customer served per year.

$$\text{SAIDI} = \frac{\text{Total Customers} - \text{Interruptions}}{\text{Total Customers Served}}$$

- 2) System Average Duration Index - is defined as the system average interruption duration for customers served per year.

$$\text{SAIDI} = \frac{\text{Total Customer} - \text{Hours of Interruptions}}{\text{Total Customers Served}}$$

Furthermore, in a 10 year (1973 to 1982) survey carried out by CIGRE, Ontario Hydro's system disturbance performance was compared with the utilities of industrialized countries of Europe, North American and Japan (153 utilities). In summary, Ontario Hydro's performance for the different levels of disturbances (i.e. degrees 1,2 and 3) was significantly better than the overall average of all utilities.

#### **2.4. Economic Impact**

The previous sections described the importance of Ontario Hydro's main task, which is to provide a reliable and low-cost supply of electrical energy to the residents of the province.

The utility because of its size, scope and operations does play important roles in provincial economic development, and notwithstanding Section 75 of the Power Authority Act, and the principle of "power at cost", the Ontario Hydro Board of Directors by legislation must act in the best interests of Ontario Hydro, its customers and the Ontario community".

In some respects these obligations are or should be no different than the responsibilities of any large business firm operating in the community. In reality, related in part to the essential kind of service provided and the fact that the service is a monopoly, owned by the people of the province, then those responsibilities and obligations are more of a long-term nature.

#### **Capital Expenditures**

Given the capital - intensive nature of the generating electricity industry, it is not surprising that the level of capital expenditures by Ontario Hydro represents a high proportion of total capital funding in Ontario and of all levels of government in Ontario. The following table - from the Porter Commission shows that since the mid 1970's the utility accounted for about 10 percent of total capital expenditures public and private - with over 70% of government capital budget:

**TABLE 13**  
**RELATIVE SIZE OF ONTARIO'S HYDROS CAPITAL SPENDING**  
**- \$ Million -**

| Capital Expenditures<br>in Ontario  | 1965  | 1970  | 1975   | 1978   |
|-------------------------------------|-------|-------|--------|--------|
| Total public and private            | 4,378 | 6,927 | 12,920 | 15,540 |
| Utilities                           | 689   | 1,334 | 2,930  | 2,972  |
| Government and<br>Institutions      | 884   | 1,299 | 2,003  | 2,094  |
| Ontario Hydro                       | 150   | 511   | 1,442  | 1,537  |
| Percentage of total                 | 3.4   | 7.4   | 11.2   | 9.9    |
| Percentage of utilities             | 21.7  | 38.3  | 49.2   | 51.7   |
| Percentage of Gov't<br>Institutions | 17.0  | 39.3  | 72.0   | 73.4   |

Source: Statistics Canada and Ontario Hydro

Since then, Ontario Hydros' capital program increased in absolute (inflationary) terms, but now represents about 50 percent of total government capital expenditures. (In 1988-89 both Ontario Government and Ontario Hydro had budgetary capital expenditures estimated at \$2.5 billion). The following table shows the current and future schedule of the utility's capital program:



TABLE 14ONTARIO HYDRO - ANNUAL INVESTMENT IN FIXED ASSETS

|                               | <u>Actual</u> |              |              |              |              | <u>Forecast</u> |                  |
|-------------------------------|---------------|--------------|--------------|--------------|--------------|-----------------|------------------|
|                               | <u>1983</u>   | <u>1984</u>  | <u>1985</u>  | <u>1986</u>  | <u>1987</u>  | <u>1988</u>     | <u>1989-1992</u> |
| <u>- \$ Million -</u>         |               |              |              |              |              |                 |                  |
| Generating stations           | 2,123         | 2,043        | 1,884        | 1,635        | 1,661        | 1,709           | 5,213            |
| Heavy water                   | 343           | 324          | 292          | 276          | 222          | 197             | 642              |
| Transmission and distribution | 186           | 169          | 249          | 422          | 494          | 692             | 2,943            |
| Administration and service    | 94            | 88           | 116          | 190          | 147          | 121             | 512              |
| Total                         | <u>2,746</u>  | <u>2,624</u> | <u>2,541</u> | <u>2,523</u> | <u>2,524</u> | <u>2,719</u>    | <u>9,310</u>     |

- (1) Investment in fixed assets represents Ontario Hydro's total expenditures on capital assets during the year.

Source: Ontario Hydro

The forecast of the costs for the construction program for the next five years, as of March 1988, shows that the major expenditure is on generation facilities, most related to the Darlington Generation Station (now estimated at \$11.6 billion to complete).

About 50 percent of the total capital expenditures are directed to labour costs (construction, technical engineering services, etc) with the remaining 50 percent attributed to machinery equipment and materials. Thus it has been estimated that nearly 80 to 85 percent represents Ontario content of the utility's capital expenditure program.

Regarding regional planning by the Government, it is clear that a major generating plant will have significant impact in the local area - particularly in its construction phase. With the adoption of standard industrial rates, though, there is no incentive for industry to locate near the generating stations.

However, during the construction of any major facilities, there are significant socio-economic impacts on nearby communities, involving large capital investment by local governments for sewers, water systems, housing, schools, other infrastructure support. These "mitigation" costs should be assumed in their entirety by the utility as a cost of adding electricity supply to all the residents of the province. But at the end of the construction project, the local economic benefit is limited in most cases to a small and highly specialized work force operating the facility.

#### Procurement

As the provinces largest company in value of assets, it is also one of the largest purchasers of goods and services. The value of purchases - excluding fuels in 1987 totalled \$830 million. The following charts and table reflect the value and number of purchases awarded over the last 11 years.

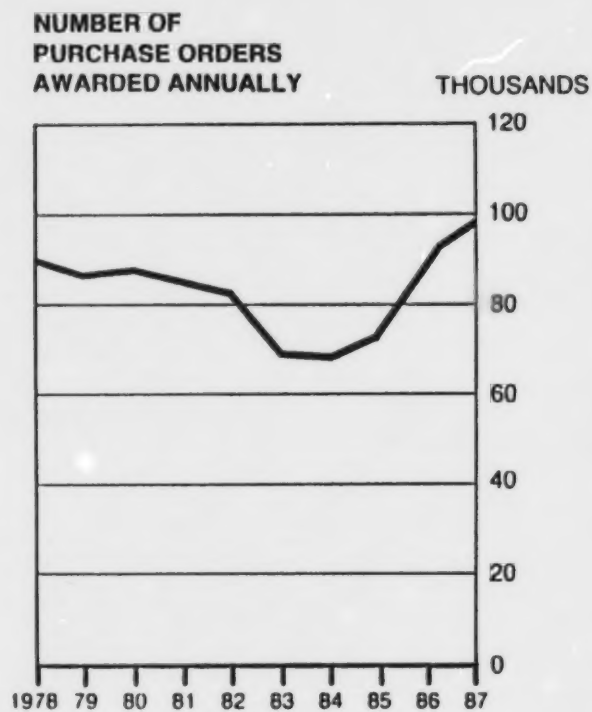
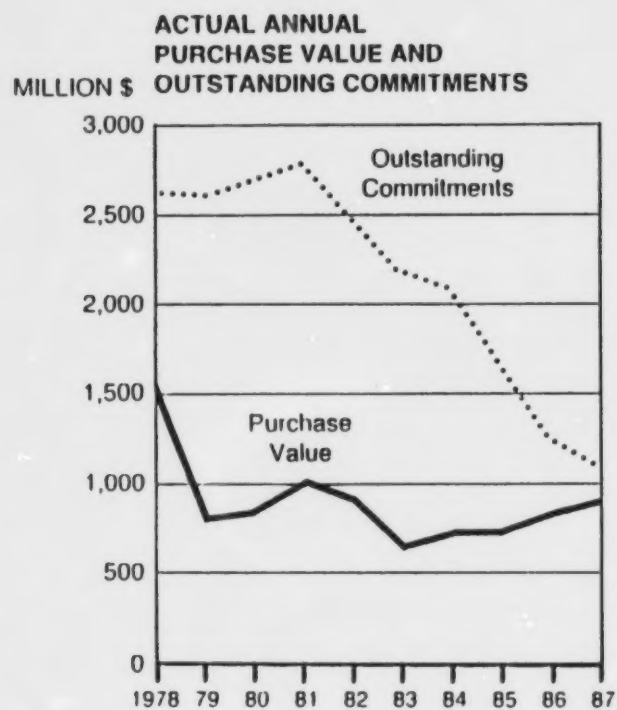
CHART 3

**TABLE 15**  
**PURCHASES - Ontario HYDRO 1978 TO 1987**

| YEAR | NUMBER OF<br>ORDERS<br>AWARDED | PURCHASE VALUE<br>\$'000 | OUTSTANDING<br>COMMITMENTS<br>\$'000 | ESTIMATED<br>ESCALATION<br>INCLUDED<br>\$'000 |
|------|--------------------------------|--------------------------|--------------------------------------|-----------------------------------------------|
| 1987 | 98,401                         | 830,180                  | 1,134,177                            | 921                                           |
| 1986 | 92,684                         | 764,909                  | 1,262,589                            | 285                                           |
| 1985 | 76,782                         | 709,798                  | 1,546,861                            | 2,541                                         |
| 1984 | 71,866                         | 733,557                  | 2,000,702                            | 6,690                                         |
| 1983 | 74,183                         | 583,204                  | 2,119,771                            | 6,690                                         |
| 1982 | 86,264,                        | 891,250                  | 2,506,064                            | 34,172                                        |
| 1981 | 91,334                         | 1,016,057                | 2,810,442                            | 52,947                                        |
| 1980 | 94,602                         | 822,470                  | 2,646,024                            | 52,427                                        |
| 1979 | 89,187                         | 769,714                  | 2,574,250                            | 22,274                                        |
| 1978 | 93,398                         | 1,532,695                | 2,665,323                            | 25,400                                        |

NOTE: (i) For consistency with previous years 1986 number of orders awarded has been restated to exclude 11,913 NOR's and field purchases.

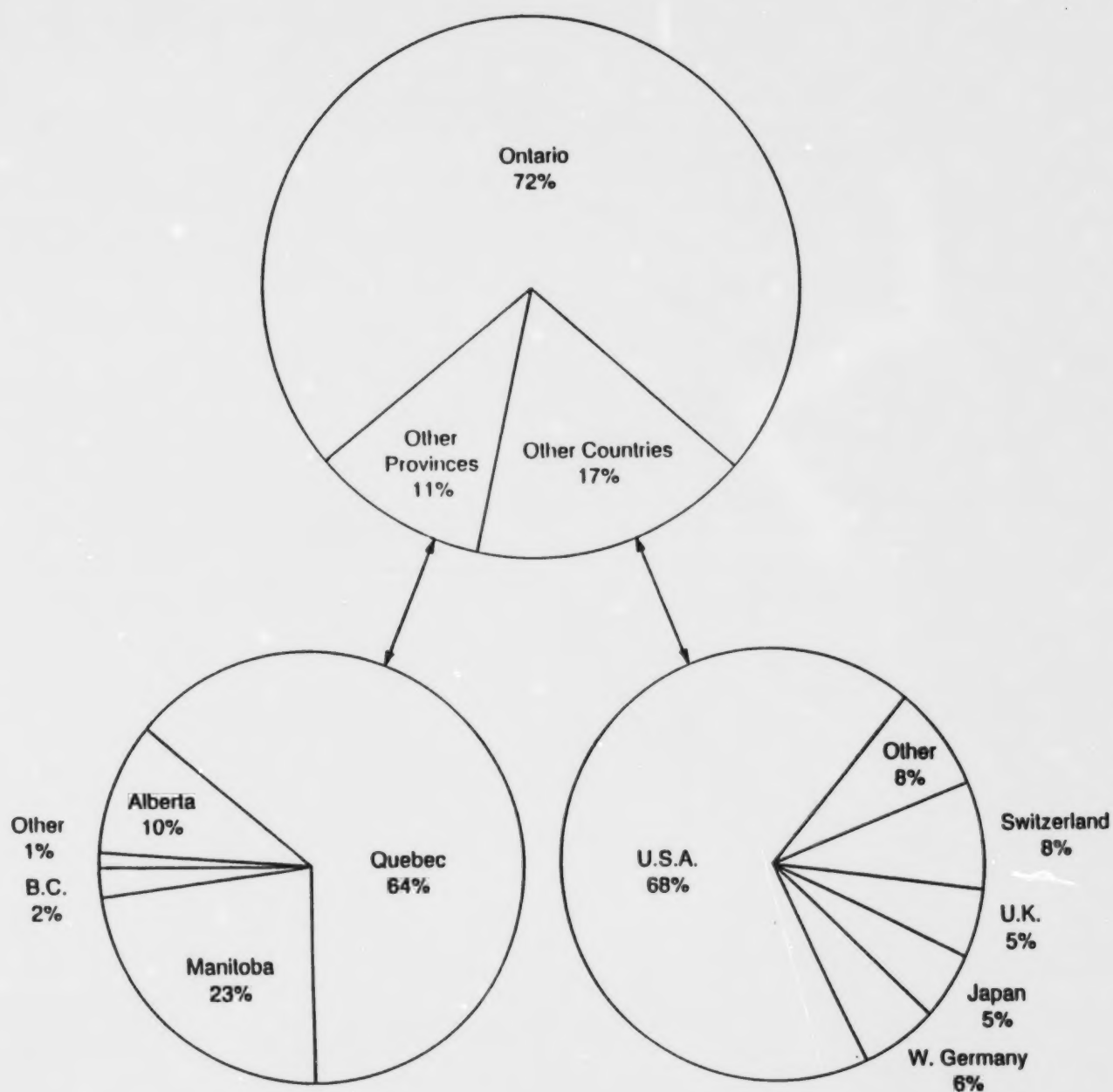
(ii) Amendments to purchase orders are not included in the above statistics except for amendments made in the same year as the orders. In 1987 the value of amendments made to all previous years orders was \$65.1 million.

Source: Supply Division, Annual Report of Procurement Activity in 1987.

The high Ontario content was noted in the previous section, in describing the economic impact of capital expenditures. This is also reflected in the following chart which shows that for 1987, the province of Ontario accounted for 72 percent of the utilities purchases, with 11 percent going to other provinces, and 17 percent offshore:

**CHART 4**  
**ONTARIO HYDRO**

**TOTAL PURCHASE VALUE  
BY POINT OF MANUFACTURE**



Source: Supply Division, Annual Report of Procurement Activity 1987.

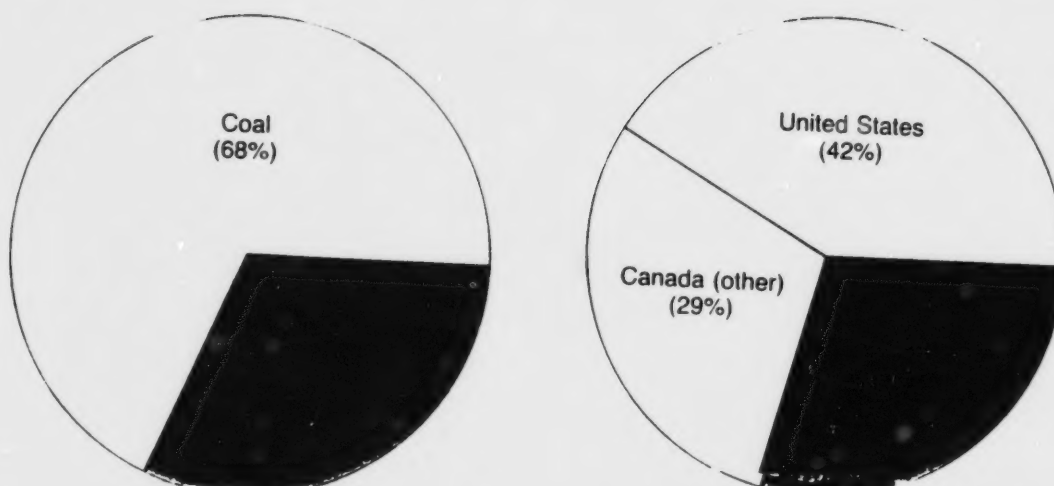


Fuel purchases by Ontario Hydro totalled about \$1 billion in 1987 with about 29 percent sourced in Ontario (uranium), 20 percent from other Canadian provinces (coal and uranium) and 42 percent from the United States (coal):

**TABLE 16**  
**ONTARIO HYDRO FUEL PURCHASES, 1987**

| <u>1987</u>    |            |
|----------------|------------|
| - \$ Million - |            |
| Ontario        | 300        |
| Canada (Other) | 304        |
| United States  | <u>446</u> |
|                | 1,050      |

**CHART 5**



Source: Fuels Division, Ontario Hydro, 1987 Annual Report

Ontario Hydro's purchases - as most other utilities - are standard in the sense of basic goods and services required for construction, engineering and related materials and equipment. In 1987, purchase value breakdown composed of the following:

|                                          |       |
|------------------------------------------|-------|
| Lines and Stations Construction          | - 40% |
| Standard Materials                       | - 21% |
| Generating Stations (under construction) | - 14% |
| Regions                                  | - 10% |
| Nuclear Operations                       | - 7%  |
| Thermal Operations                       | - 5%  |

It is worth noting that while regions account for 10 percent of total purchases, at present there is no system in place to attempt to estimate source of purchasing within Ontario (albeit some of the limitations with this measurement indicator). It has been estimated though that over 95 percent of Ontario Purchasing is undertaken by the head office in Toronto. Smaller satellite purchasing offices in Pickering, London and Thunder Bay account for the remaining 5 percent of purchases from the province. New satellite purchasing offices are planned for Belleville, Bruce, and North Bay.

In summary, it would appear that Ontario content sourcing of the corporation's purchases have been very high. This level has been reached with a minor preferential procurement policy of up to 10 percent premium for Canadian suppliers and up to 3 percent for "local" Ontario company based suppliers. While a study should be undertaken to analyze the degree to which these premiums have become operational, some additional efforts are required to breakdown certain institutional barriers and provide greater opportunities for bidding by firms and companies in eastern and northern communities and by northern groups with emphasis on native business.

Some possibilities that could be considered are mentioned in Chapter 5 in the discussion of the Limestone Generating Station. It was deemed good long-term business practice in Manitoba to initiate programs on purchasing and training and employment which reflected sensibility to the economic, social, and environmental concerns of Manitobans, especially those northern business and native groups where major hydro development was scheduled to take place. Thus corporate plans were developed and implemented to maximize economic benefits in future supply programs, while still bearing in mind the traditional responsibilities of the utility on economy and efficiency of supply and sound business practice.

There is one area for reference in any future procurement plans and that is a proposed agreement by all provinces and the federal government on procurement matters. It would appear that a tentative agreement has been reached, titled the: Intergovernmental Agreement on the Reduction of Interprovincial Barriers to Trade Related to Government Procurement, which is to be ratified in April 1989. Appendix E provides the details of this Agreement.

This agreement is worded very loosely regarded firm long-term commitments; in addition, it currently excludes crown corporations and agencies from any application.

#### Research and Development

Ontario Hydro's research and development (R & D) activities are directed "in-house" and are primarily oriented to the security, efficiency and environmental impact of the company's nuclear generating stations.

In 1987, the utility spent a total of \$91 million on R & D, with over 60 percent related to nuclear and nuclear related issues: The following table shows the company's research division expenditures (about \$60 million) by program area:

TABLE 17R & D ACTIVITIES, Ontario HYDRO RESEARCH DIVISION

- % of Gross Expenditures -

|                                        | Annual      |             | Forecast    |             |
|----------------------------------------|-------------|-------------|-------------|-------------|
|                                        | <u>1982</u> | <u>1986</u> | <u>1990</u> | <u>1997</u> |
| Nuclear Generation                     | 33          | 38          | 37          | 36          |
| Transmission System                    | 11          | 10          | 10          | 10          |
| Environmental                          | 11          | 7           | 9           | 8           |
| General Research                       | 9           | 10          | 9           | 10          |
| Supporting Activities                  | 8           | 9           | 7           | 7           |
| Electric Power Supply                  | 6           | 6           | 7           | 8           |
| Nuclear Waste                          | 6           | 4           | 4           | 4           |
| Thermal Generation                     | 6           | 3           | 2           | 2           |
| Conservation and<br>Alternative Energy | 4           | 6           | 9           | 9           |
| Distribution Systems                   | 4           | 4           | 4           | 4           |
| Hydraulic Generation                   | 2           | 3           | 2           | 2           |
|                                        | <hr/>       | <hr/>       | <hr/>       | <hr/>       |
| Total                                  | 100         | 100         | 100         | 100         |

Source: Research Division Business Plan 1988-97

Ontario Hydro's research activities are focused primarily on solving both short-term and long-term problems related to its diversified operations in generating, transmitting and distributing electrical energy throughout the province.

In a limited way, it can be supportive of economic growth and development within the province, by assisting needs of industry, education institutions, etc. in identified areas that relate in part to the utilities requirements.

To the degree it involves itself in supporting firms and industries, it can not simply become an "R & D" lab for new private sector products and processes. The company's mission in R & D has to be related to Ontario Hydro requirements; but it should explore in a more systematic manner opportunities for commercial area utilization and development.

When it does focus on economic issues, in some collaborative basis, it should do so on a profitable opportunity basis.

#### Business Activities

In 1983 as part of an internal company reorganization, the Energy Management Branch was established to promote customers interest and to foster the related business activities.

The latter took the form of a New Business Ventures (NBV) Division, to market throughout the world, material and other by products of Hydro's electricity and generating activities (mainly nuclear) as well as consulting and training activities directly related to the utilities operations.

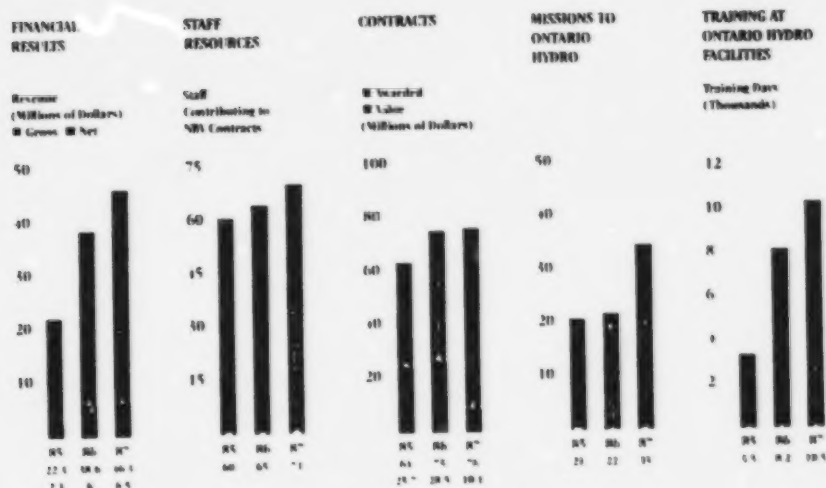
N.B.V.'s mandate is three fold: profit, personal and professional development of Hydro employees, and a contribution to the Ontario economy, by spinning off international business opportunities in partnership with the private sector and other institutions.

The Divisions revenues have increased from \$12 million in 1984 to \$ 46 million in 1987 with isotope sale accounting for 65 percent of the business, consulting and training services - 22 percent, and technology product and services - about 13 percent. Profits - again mainly from isotope business - have increased from \$ 1 million in 1984 to \$ 6.5 million in 1987, to \$ 10.0 million in 1988.

The following chart provide a summary of the N.B.V.'s activities over the last 3 years:



**CHART 6**  
**NEW BUSINESS VENTURES DIVISION, 1983 TO 1987**



Source: New Business Ventures, Annual Report 1987.

It is clear that with the concentrated attention over the last 4 years, Ontario Hydro has managed to more successfully utilize its internal resources more effectively to both provide an additive stimulus to the private sector in Ontario, and to contribute financially and in human resources to the operations of the utility.

While it appears not to have dampened its initial success, making N.B.V. a part of the Energy Management Division may cause difficulties in the future. Strategies to increase electrical efficiency in each customer sector (industrial, commercial and residential) may cause specific conflicts; in any case N.B.V. interests are more specific and limited.

In that connection, there is a fine line on the degree to which N.B.V. can become more independent and separate. Its very success is largely caused by the close ties within Ontario Hydro itself. IF N.B.V. become a truly independent business driven by market opportunities, in a separate autonomous structure, then it may lose the ability to call upon the various resources within Ontario Hydro. But it can contribute to the economic activities within the province while maintaining its role within the Ontario Hydro organization and operation.

Summary:

Through the years, the growth of Ontario Hydro has paralleled that of the province. Not only has the utility supplied the low-cost reliable energy required by residential and industrial customers, it has also played an important role in the economic life of the province.

A number of areas of the company's activities have been described and reviewed, with emphasis on capital spending, procurement, research and development, and business practices. While the overall performance has been improved, there remain certain opportunities available to increase the effectiveness of Ontario Hydro's contribution to provincial economic growth and development. It is believed these can take place within the general mandate and principle of the utility, to supply electric power at cost, in such a manner which will result in the greatest overall benefit to the Ontario community and to its customers over the long run.

## CHAPTER 3

### EXPERIENCE OF OTHER CANADIAN UTILITIES

This chapter briefly highlights the current activities of other publicly-owned electricity utilities in Canada and how their operations and activities play a role in the economic development of their perspective province.

Where practices and programs have developed that are different from those of Ontario Hydro, these will be emphasized.

In general, a perusal of all the legislative acts establishing such monopoly utility companies, to produce distribute and transmit electricity to residents of their province, show great similarity. The "power at cost" principle is an interpretive one with some utilities establishing certain financial or economic objectives which appear to contravene this principle.

#### 3.1. Hydro Quebec

This utility which is owned by the Government of Quebec, is by far the most active in the area of attempting to stimulate economic development and employment in the province.

Hydro Quebec is the second largest utility in Canada (after Ontario Hydro) with assets of more than \$31 billion and 19,000 employees. It owns and operates 80 generating stations (mainly hydraulic) with an installed capacity of 24,533 megawatts.

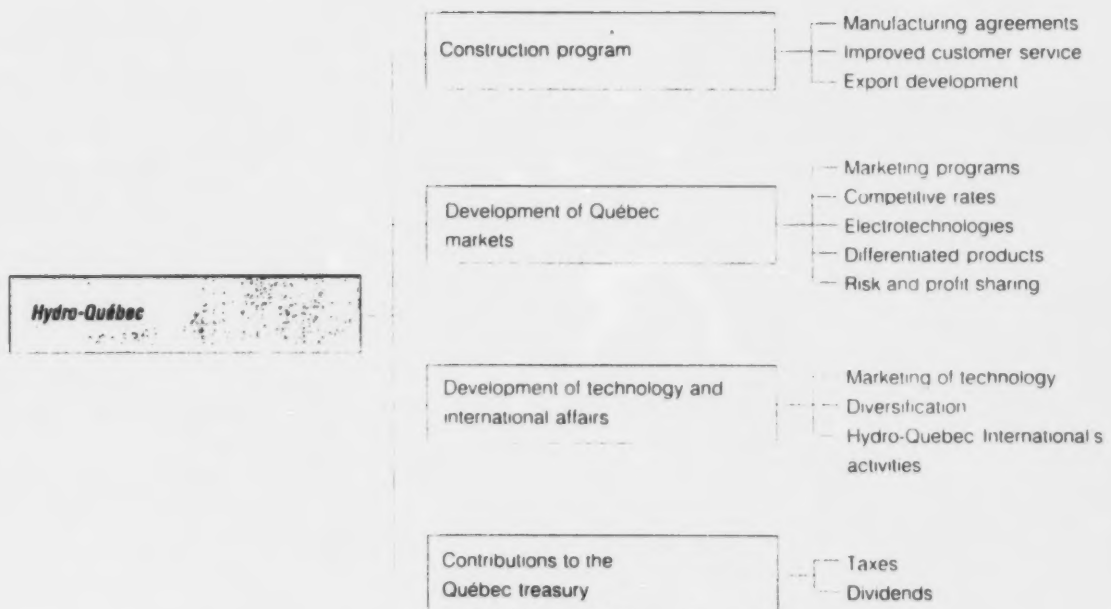
While its principal mandate is to supply the province with electricity, it carries out a variety of programs such as research and promotion related to electricity, energy-intensive industry development, international development activity and other related fields.

Hydro Quebec, in their three year development plan (latest 1988-1990), attempts to document how its plans have major economic spinoffs affecting the economy of Quebec.

The following chart and table show the areas of direct and indirect job impact, with an estimated 58,000 jobs sustained claimed on behalf of Hydro Quebec's planned activities:

**CHART 8**

**HYDRO-QUEBEC, DEVELOPMENT LEVERS AND JOB CREATION**



Source: Hydro Quebec Development Plan 1988-1990, 1988.

**TABLE 18**  
**JOBS SUSTAINED BY HYDRO QUEBEC**  
 (in Person Years)

|                                                                 | 1986*         | 1987          | 1988          | 1989          | 1990          |
|-----------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Generation, transmission and distribution of electricity</b> |               |               |               |               |               |
| Jobs related to operations                                      | 19,900        | 22,395        | 23,135        | 23,135        | 23,390        |
| . Direct                                                        | 15,570        | 15,680        | 16,170        | 16,320        | 16,380        |
| . Indirect                                                      | 4,420         | 6,715         | 6,965         | 7,030         | 7,010         |
| Jobs related to capital investments                             | 15,775        | 17,185        | 21,725        | 22,040        | 23,540        |
| . Direct                                                        | 8,265         | 8,515         | 10,190        | 10,305        | 11,015        |
| . Indirect                                                      | 7,510         | 8,670         | 11,535        | 11,735        | 12,525        |
| Total                                                           | 35,765        | 39,580        | 44,860        | 45,390        | 46,930        |
| <b>Marketing of electricity</b>                                 |               |               |               |               |               |
| Jobs related to marketing programs                              | 10,580        | 4,220         | 3,785         | 1,690         | 700           |
| . Dual-energy                                                   | 1,775         | 710           | 125           | 210           | 280           |
| . Electrotechnologies                                           | 360           | 400           | 195           | 465           | 465           |
| . Rate discounts                                                | 8,100         | 3,045         | 3,440         | 990           | 0             |
| . Other                                                         | 345           | 65            | 25            | 25            | 25            |
| Jobs related to rate advantages for large-power industries      | 11,615        | 7,845         | 9,100         | 11,220        | 11,030        |
| Total                                                           | 22,195        | 12,065        | 12,885        | 12,910        | 11,800        |
| <b>TOTAL</b>                                                    | <b>57,960</b> | <b>51,645</b> | <b>57,745</b> | <b>58,300</b> | <b>58,730</b> |

\* Revised figures for 1986.

Source: Hydro Quebec Development Plan, 1988-1990, 1988

A number of programs undertaken by the utility in its operations obviously affects the economic and regional growth of the province. However many of its current programs relate to eliminating the significant power surplus available as a result of Hydro-Quebec (as well as most other North American utilities), overbuilding its base-load generating capacity in anticipation of a continued demand in the late 1970's and early 1980's that did not materialize.

Consequently, because of this sunken investment, many programs were introduced as part of an aggressive marketing scheme to accelerate the consumption of electricity - both in domestic and external markets (export sales to U.S. utilities). The main industrial sector affected was the large energy-intensive aluminum, magnesium and other smelting and refining industries, as well as the modernization of pulp and paper plants.

A. Industrial Development Activity:

Recently Hydro Quebec sales to industrial customers have increased at a much greater rate (14.2 percent in 1987) than overall customer sales. This is in large part due to the utility's diverse and aggressive marketing program. In the early 1980's a number of programs were initiated to sell the utility's huge surplus of electricity. These included:

a) Incentive Rates:

Began in 1983 and will continue to 1992, though no new applications are being accepted. The program applied to industrial customers willing to undertake expansion. It offered discounts of 50 percent (1983) which decline to 10 percent (1991).

b) Boiler Program:

- subsidized the installation of electric boilers in industry from 1983-87.



- 400 agreements representing 3207 MW were signed under the program.
- when it was closed most plants converted to an oil/electricity mix.

Hydro Quebec no longer sells interruptible power to avoid spillage. Surplus sales are being reduced, starting in 1987. The utility now determines sales on the basis of market price and will store water when necessary. In export sales the goal is to increase firm agreements and reduce surplus sales.

The new marketing policy developed in 1986, determined that all sales outside published rates will be negotiated within the context of specific programs. These included:

1. Dual Energy Program:

Started up to encourage business/institutional/ industrial customers to consume power off peak by offering across the board rates for all energy consumed.

2. Electrotechnology Implementation Assistance Program:

- designed to introduce highly efficient, electrical technologies into industrial processes.
- 275 agreements with firms have been signed under the program representing 268 MW of capacity and \$27 million revenue (1987).

3. Interruptible Power Programs:

- industrial customers are offered power under interruptible rates and conditions.
- HQ wants to expand this initiative from 500 MW (sold currently) to 2,000 MW by 1996.

#### 4. Risk and Profit Sharing Program:

- introduced in 1986.
- offers energy intensive industries rate reductions over several years in exchange for a proportion of future profits.
- the aim is to attract new industry to the province and to expand existing plants.
- by the end of 1987, 8 agreements under this program existed, totalling an energy capacity of 812 megawatts.
- customers included firms involved in smelting, refining chemicals as well as pulp and paper.
- HQ is currently doing an overall evaluation of this program.

#### B. Research and Development (R & D):

Hydro Quebec spent \$100 million technological R&D demonstration projects in 1987, \$16 million of which was provided from outside sources.

##### 1. LTEE:

- opened in 1987 at Shawinigan
- it is a laboratory designed to develop new industrial applications for electricity and works in cooperation with industrial/institutional clients
- by the end of 1987, 10 projects were underway here. They were mainly in the areas of electrotechnologies (infrared drying and magnetic induction heating) plasma technology (torch drying of mineral dust) and industrial chemistry and electrochemistry (production of hydrogen, molten-salt electrolysis and electro-synthesis)
- Quebec and the federal government initiated a joint \$10 million research and demonstration project under the LTEE between 1987-1990.
- LTEE has \$30 million budget for 1987-1990.

## 2. IREQ:

- carries out long term research and develops technology in electrical generation and transmission
- often the institute does research in collaboration with the private sector. Recent projects include:
  - a) research on reservoir management
  - b) robotic repair of turbines
  - c) development of IRECA stainless steel used to repair cavitation damage in turbines
  - d) pilot project on digital mapping in cooperation with Bell Canada.

Technical development activities will require a \$300 million budget (1988-1990). Hydro Quebec also maintains a number of smaller research and development units and subsidiaries including:

1. Cyme International - a microcomputer subsidiary
2. Vibrometer Inc. - a vibratin and gap measurement company
3. Canadian Magnetic Fusion Centre
  - integrating all scientific activity on nuclear fusion
  - founded by HQ, AECL & institution national de la recherche scientifique.

## Research Work with Quebec Universities:

Hydro Quebec has a number of research activities underway with universities in the province, including:

- a) magnetic fusion research at University of Montreal
- b) funding of a microwave laboratory at Ecole polytechnique de Montreal
- c) development of artificial lighting for commercial greenhouses - Laval University
- d) finances a Chair of Environmental Studies at University of Quebec at Montreal.

C. Hydro-Quebec Business Products and International Activities:

Hydro Quebec Products:

The utility has developed a number of electricity-related products which are manufactured and sold under license. including:

- a) electromagnetic dosimeter: measuring electromagnetic fields surrounding transmission lines
- b) capacitor divider: which allows the tapping of high voltage transmission lines to supply isolated loads of 100 kilowatts
- c) articulated arm space dampers.

International Activities:

Hydro Quebec International -- a wholly owned subsidiary offering electricity related consulting services largely in developing countries, sometimes in cooperation with other Canadian utilities.

In 1987 Hydro Quebec International provided technical advice, feasibility work, routing studies, transmission and engineering studies, advice on system management, improving transmission line efficiency and service continuity in Asian, Latin American and African countries.

D. Procurement

Hydro Quebec purchasing policy restricts bidding to Quebec firms if three or more qualified bidders can be found, with a Quebec-based preference of 10 per cent if in competition with other Canadian or off-shore firms.

The policy clearly has resulted in greater cost to the Hydro-Quebec ratepayer; but is justified by Hydro Quebec officials in their responsibility as a Quebec crown-owned corporation.

E. Future Development

Hydro Quebec will require additional facilities beginning in 1995 in order to meet its energy and power requirement. It has access to considerable undeveloped hydro electric potential -- approximately 40,000 megawatts. Depending on the success of its current export sales marketing plans, its current capital expenditure program of about \$2.5 billion for each of the next 3 years, could be accelerated.

It is clear that by choosing strategies to develop its share of the Quebec and external markets to decrease its existing surplus, Hydro Quebec has increased its economic risks in both domestic and external markets. The former relates to contracts undertaken for certain customers in large power industries which include profit-sharing in the context of the economic situation -which may or may not be favorable. In the latter, firm export sales commitments include the risks associated with the advanced commissioning of generating facilities.

In summary it is clear that Hydro Quebec and its only shareholder, the Government of Quebec have consistently viewed the utility as a greater catalyst for economic development in the province than have other provincial governments and their utilities. To a large degree, this "maître-chez-nous" policy reflects both, the more recent public ownership of this industry in the province, and the emerging Quebecois entrepreneurship of the quiet revolution in the development of Quebec-based institutions and agencies to stimulate economic activity within the province. (Although Hydro-Quebec was created in 1944, it was only in 1963 that it acquired most of the remaining private electric companies and gradually established a vast, integrated electrical generating, transmission and distribution system).



### 3.2 British Columbia Hydro And Power Authority

B.C. Hydro is a provincial crown corporation which generates, transmits and distributes electricity to most parts of the Province of British Columbia (There are about 2 to 3 small locally-based utilities which serve small areas, i.e. West Kootneys). The utility is the third largest in Canada with assets of \$8.4 billion, serving 1.2 million customers with electricity primarily generated from hydraulic plants.

The company's mission statement indicates the importance of supplying power at cost; but it emphasizes its economic development role as well:

"To support the economic growth of British Columbia through the efficient supply of electricity .... To maximize our contribution to the economic development of British Columbia".

#### Local Purchasing

B.C. Hydro is committed to buying from local suppliers, generally, where possible and where it is economically competitive to do so. The utility has established a Supplier Development Department which identifies products imported by Hydro and works with companies in the province to help them manufacture these items. Unlike most utilities who emphasize local purchasing, B.C. Hydro does not identify a contribution made annually to its requirements by businesses within the province.

#### International Activity

- accomplished through B.C. Hydro International Limited a wholly owned subsidiary which provides consulting services offshore and engineering services within the province
- B.C. Hydro International generated \$3 million revenue 1987/88
- past projects have included:



- feasibility studies on the Three Gorges Hydroelectric project on the Yangtze River (funded by CIDA).
- Guri Hydroelectric Project - Venezuela - design, supply and installation of generator components. Contract worth \$2 mill with 70% of the work subcontracted within B.C.

### Incentive Rates

B.C. Hydro has maintained 2 programs in recent years offering lower electric rates to reduce surplus energy available and enhance economic development. Both were initiated in 1985.

1. Critical Industries Act:

This legislation was introduced to reduce job loss and corporate closures resulting from low market prices for minerals. The program concluded in 1987.

- 5 companies took part
- the program is credited by the utility with saving 2,800 jobs in 12 firms, bringing in \$41 million of revenue to Hydro and \$13 million in taxes to the province.

2. Industrial Electricity Rate Discount Act:

- is aimed at attracting new companies to the province and stimulating existing ones to expand
- it has committed 8 billion kWh in surplus power to 16 (1988) mining, petrochemical, forestry and electrochemical companies
- credited by the utility with creating 1,000 permanent and 1,500 construction jobs. The program has cost B.C. Hydro \$85 million; but generated \$110 million in new revenue for the corporation. The province has received \$45 mill in additional tax revenue.

The terms and conditions of sales under this program are set by the provincial cabinet. Cabinet fixes the rates, specifies the period they will be offered for and the amount of electricity to be sold.

The purpose of the program is to increase electrical consumption. Rates are determined on the basis of the incentive required to get new companies to locate in B.C. or expand within the province.

The terms of discount rates offered reflect the utility's projections that its remaining surplus of electricity will be eliminated by the mid 1990's.

Eligibility for the Industrial Electricity Rate Discount Act includes:

1. only available for manufacturing, mining and processing plants
2. the additional load cannot replace existing load
3. the customer must be served at 60 KV or higher and any alterations or extensions of transmission facilities are at the owner's expense
4. the customer must prove the increase in electrical consumption would not have occurred without discount rates.

While the main thrust of the program is to sell new firm load non-firm surplus is also sold for objectives like plant modernization and oil displacement.

Rates under the program are neither public nor eligible for regulatory review; using information supplied in recent annual reports the average industrial rate made available is about two cents/kWh.

Overall industrial load within B.C. has increased 45% in the past 5 years and with no surplus energy available, the discount programs have been discontinued.

### Future Development

B.C. Hydro has gone through considerable turmoil over the last number of years with extensive cutting back on staff and a general downsizing of its operations.

Recently it has shifted away from capital expansion on its extensive hydro-electric untapped capacity (10,000 megawatts) and is concentrating on 'privatizing' any opportunities for U.S. export markets. Up to the early 1980's, expenditure on capital projects topped \$1 billion annually; in 1987/88 it totalled \$163 million. Currently a Ten Year Electric System Development Plan is being developed -- with both demand/supply management options.

### 3.3. Manitoba Hydro-Electric Board

Manitoba Hydro is a provincial government owned crown corporation with the responsibility of providing electrical energy to about 347,000 customers throughout the province. The utility is the fourth largest in Canada with assets of about \$3.2 billion and 4,000 employees and a generating capacity of 4,091 megawatts (Undeveloped hydraulic potential developments are estimated at 8,000 megawatts).

The primary role of Manitoba is similar to other provincial utilities in providing electricity at cost. In recent years it has become a greater catalyst for economic development activities within the province - in part associated with the construction of the Limestone Generating Station on the Nelson River. (Details on the economic activities associated with this construction program are detailed in Chapter 4).

### Purchasing Policy

While the open, competitive tendering process remains as the cornerstone of Manitoba Hydro's purchasing policy, that policy is currently designed to promote the maximization of Manitoba economic benefits. As an example, specifications for Limestone contracts require information regarding the amount of Manitoba

content in a supplier's bid, that amount being an influencing factor in the determination of a contract award. If Manitoba content is large, and price premiums (price differences over low bid) are small, a bidder with higher Manitoba content may be chosen as the successful bidder.

As benefits are province-wide, it is recognized that the cost should be borne by the taxpayers rather than the utility's ratepayers. The Government has, therefore, made a commitment to reimburse Hydro for such premium amounts.

An example of this is the reimbursement by Government to Hydro of a \$ 600,000. premium paid by Hydro to achieve 65% Manitoba content in the supply of spillway gates for Limestone.

In addition to Manitoba content considerations, some tenders (those requiring large capital expenditures) will include a call for proposals for industrial offsets.

For example, in September, 1987, Marine Industries Ltd. (M.I.L.) of Montreal was awarded a synchronous condenser contract, valued at \$ 32.6 million. MIL was awarded the contract on the basis of its low price and an attractive industrial benefits package. The industrial benefits included \$ 6.0 million in Manitoba content, \$ 10.25 million in other Manitoba purchases or offsets (purchases unrelated to the contract) and \$ 3.0 million in investment in Manitoba (a Winnipeg office and an equipment and technology transfer).

#### Individual Incentive Rates

Currently, there are no industrial incentive rates available in Manitoba for prospective firm loads, occurring through either the expansion of an existing load or the creation of a new load.

As noted earlier, incentive rates (also known as discount and promotional rates) which are rates lower than published

rates, are designed to encourage consumption of electricity and generally have been introduced when provincial utilities were faced with significant surplus capacity conditions. While such has been the situation in Quebec and BC, it has been less so in Manitoba due to the external electricity markets both in Canada and the United States.

A review is currently underway to investigate the feasibility of some incentive rate structure for potential large industries in view of the expected short-term surplus of hydro-electric capacity in the early 1990's - following the commissioning of the Limestone Generating Station. Since the immediate domestic additional requirement is 100-150 megawatts and the committed export sale is 500 megawatts, there may be a more profitable opportunity for the remaining 400 to 500 megawatts than selling it on the interruptible export market for 3 to 4 years. (Large hydraulic stations are not divisible when constructed, and it takes a period of time for domestic markets to increase on an incremental basis for future consumption and demand)

In its recent report on Manitoba Hydro's rates the Manitoba Public Utility Board made the following comments on incentive rates:

"Regarding special incentive rates to attract new industry to Manitoba, or for the existing industry to expand in Manitoba, the Board believes this is the responsibility of the provincial government. Tariff rates should be paid by industry to Hydro. The government could if it so desires, reimburse industry for the incentive portion of the rate."

It should be noted that this comment was made in the context of the current supply situation; that is, there is a market for all of the electricity being generated.



### International Activities

Manitoba Hydro has recently established an export consulting and training services division whose objectives are the following:

- (a) Retain and develop existing specialized staff resources by exposure to outside experience.
- (b) Assist the electrical power sector industry in Manitoba to enlarge its export business and create new jobs in the province.
- (c) Contribute to the Corporation net revenues. The intent of this objective is that the rate payers will not be negatively impacted as a result of the export services function.

Thus the utility has basically followed the earlier examples of Ontario Hydro, Quebec Hydro and B.C. Hydro in offering technical and management services to countries that want to improve and expand their electric power systems.

To date it is involved in projects in China, India, Egypt and Brazil - with most of the construction financing tied to the Canadian International Development Agency.

### Research and Development

Manitoba Hydro Research and Development activities are closely related to the Manitoba HUDC Research Centre, the Industrial Applications of Microelectronics Centre, the University of Manitoba and the Canadian Electrical Association.

Although the utility's program covers everything from generation and transmission to distribution and utilization, the major position is devoted to High Voltage Direct Current transmission, an area in which Manitoba Hydro has gained world-wide recognition for its expertise.



The company has followed a middle approach in developing technological expertise for the design and engineering management of high voltage electric power transmission systems. It has both supported this expertise - in house as well as in the private engineering consulting sector (e.g. Teshmont Consultants Inc.) This contrasts with Hydro Quebec who have gone almost completely external for engineering support (Lavelin, S.N.C. etc.) and Ontario Hydro, who developed the nuclear engineering expertise within the corporation.

#### Future Development

Manitoba Hydro - after the construction and full operation of Limestone Generating station in 1992 - will still have about 8,000 megawatts of untapped hydro potential. The future development of these resources will be dependent on the success in further export electricity sales either to the United States or to Ontario, and the province's ability to attract energy-intensive industries such as aluminum and magnesium smelters.

It should be emphasized that the prime responsibility for these areas since 1980 has been another crown agency, the Manitoba Energy Authority. Its mandate is to co-ordinate all government policy related to the hydro construction program in the province, to conduct hydro-electric export power negotiations with utilities outside the province and to encourage energy-dependent industries to locate operations within the province.

### 3.4 Other Utilities

#### Saskatchewan Power Corporation

The general mission of this crown corporation is "to meet the natural gas and electricity needs of Saskatchewan residents in an economical, safe, reliable, efficient and environmentally responsible manner".

Saskatchewan Power has no economic development goals within its defined objectives except to try and equalize service to both

urban and rural customers. At present this is largely being accomplished through an initiative replacing overhead with underground distribution in rural areas. Saskatchewan Power is also working with the province on irrigation projects related to its new Shand plant and expects to irrigate 200,000 acres as a result.

#### **Local Purchasing:**

- Saskatchewan Supplier Development Program (SSDP): whereby the utility works with local suppliers (no price premium exists) to encourage them to supply the utility. The program also attracts suppliers of Saskatchewan Power to locate in the province. In 1987 84% of Saskatchewan Power goods and services were purchased within the province. When the SSDP began in 1983 only 35% of Saskatchewan Power's requirements were met within the province.
- The utility maintains that 100 new products are now being produced in Saskatchewan, as a result of SSDP, that weren't previously available.
- Saskatchewan Power states that companies that have located in the province as a result of SSDP include Dupont (plastic pipe), Phillips (cable), Sangamo (electric meter repair), \*Hitachi (turbine parts), Babcock and Wilcox (boiler plant). \*Hitachi established a plant near Saskatoon when it received the contract to supply turbines for the Shand generating station.
- The utility is now examining the economic feasibility of contracting out to the private sector where it is more economical.

#### **Industrial Incentives:**

The company introduced an incentive rate in 1983 which was phased out in 1988. The rate was intended to help existing industry through difficult economic times and applied to loads in excess of 2000 KVA. All charges on incremental demand were removed (i.e. demand above the average of a customer's 1983 Jan., Feb. and March billing).

**Future Development:**

The 300 MW Shand coal generating station is expected to produce first power in 1992. Beyond this new facility Saskatchewan Power is trying to defer all capital expenditure. The utility is currently attempting to downsize its workforce.

**Atlantic Provinces Utilities**

Basically, The New Brunswick Power Commission, The Nova Scotia Power Corporation and the Newfoundland Labrador Hydro play a more traditional role as the provincial crown company with responsibility for generation and distribution of electricity.

Their respective roles in economic development activities can be summarized by referring to the general mission statement of Newfoundland Labrador Hydro:

"The Company is dedicated to increasing the prosperity of Newfoundlanders by forming and supporting businesses which create wealth for the people of the province in a manner consistent with the company's obligations to its owners, customers and employees".

Recently the company formed a subsidiary company to broaden the business scope of the utility as a larger player in the provincial economy to develop business opportunities.

**Edmonton Power**

An example of a small municipal utility in using an industrial incentive rate is Edmonton Power which serves the City of Edmonton.

It introduced a program in September 1987 to attract industry to Edmonton.

The rate applies to new or renewal contracts with customers who contract for a minimum of 2,000 kW and who are engaged in the business of processing a feedstock, producing or manufacturing a primary product or transporting a product to market.

Both the demand and energy charges are lower than regular rates. There are also a number of optional features which would allow further lowering of the charges. These are for interruptible service, off-peak consumption and load shedding.

## CHAPTER 4

### THE MANITOBA EXPERIENCE: THE LIMESTONE GENERATING STATION

In March 1985, the National Energy Board approved an application by Manitoba to export 500 megawatts of electricity to Northern States Power, a large Minnesota based utility in the United States for a period of 12 years beginning in 1993.

As a direct result of the sale, the decision was made to construct the 1200 megawatt Limestone Generating Station on the Nelson River in Northern Manitoba. This massive undertaking, which was then estimated to cost \$2.52 billion and take seven years to complete, provided an unprecedented opportunity for policies and programs to be formulated in an attempt to maximize economic benefits for the people of Manitoba with special emphasis on Northern Manitobans.

The development of Manitoba's hydro-electric resources was not new. Limestone was one of a series of potential hydro developments identified on the Nelson River. However, in the past, hydro-electric development in the North had been undertaken without any serious effort to maximize economic opportunities for the province and to improve the social and economic status of Northern residents.

Manitoba Hydro had previously built two large generating stations in the North (Long Spruce and Kettle) in the seventies. But neither Manitoba Hydro nor the then provincial governments developed any systematic plan and policies for training and employment, for purchasing for industrial offsets - to ensure long-term benefits to the province. Hydro's policies were then (as they are today) to provide power at cost; if additional objectives were required then they would have to be specifically outlined - with costs attributed to the responsible agency.



#### 4.1 Structure and Process

Although the environmental impact of Limestone was estimated to be negligible (no massive flooding of lands, third in a series of dams, run-of-the-river concept, etc), the then Government of Manitoba was determined that its construction would have positive benefits - particularly for Northerners. To this end a task force of Northern M.L.A.'s was established whose mission was to visit Northern communities and to gather ideas, suggestions, and concerns from residents and report these to Cabinet in order that they might be incorporated into the planning process for Limestone.

As might be expected, many of the views expressed dwelt on the failures of the past. From Limestone northerners wanted skills, jobs, and business opportunities: skills that could be utilized not only at the Limestone site but also within the communities; jobs not only in construction, but also technical and administrative positions that would remain when the dam was built; businesses that would not only serve Limestone, but which could continue thereafter. A very clear understanding was expressed that these objectives could only be achieved if they were translated into precise policies and programmes designed to overcome barriers that existed in the past. Furthermore, northerners, and the northern native organizations in particular, wanted involvement and participation in the planning and delivery of programmes.

The consultation process was extremely valuable, and is, in fact on-going. Many suggestions were incorporated into programmes. However, perhaps the most significant result was the decision by the major native organizations to form one entity with which to deal with the government on Limestone, an entity that has brought together status Indians, Metis, and representatives from the Northern Association of Community Councils, in itself an unprecedented step, and which has been titled the Limestone Aboriginal Partnership Directorate Board.





To co-ordinate all the activities regarding the construction of Limestone Generating Station, the Government of Manitoba assigned the role to a crown agency, the Manitoba Energy Authority (M.E.A.).

The M.E.A. provided a policy formulation and co-ordination function with respect to Manitoba Energy resources. The Act (1980) stated in part that the M.E.A. shall:

"develop, and recommend to the minister, energy policies for the province including policies relating to the exploration for, production, recovery, manufacture, processing, transmission, distribution, sale, purchase, exchange, disposal, supply, demand, use, conservation, allocation and export of energy;"  
(see attached MEA Act).

The Act also required the MEA to carry out appropriate research with respect to these duties, describing the Authority as an agency which advises the Province of Manitoba on energy matters.

Aside from its mandate in electrical energy marketing, sales negotiations, and energy allocation planning, the MEA thus provided central coordination role regarding certain aspects of the development of Manitoba Hydro's generating capacity.

The overall goal of the MEA policy coordination function was to assure a maximum degree of economic benefits from the construction of hydro-electric facilities. Activities were undertaken by the MEA in collaboration with Manitoba Hydro and related government departments and were centered on:

- i) the implementation of training and employment policies to assure a minimum degree of skill development and employment for Northern Native, Northern, and Manitoba residents;

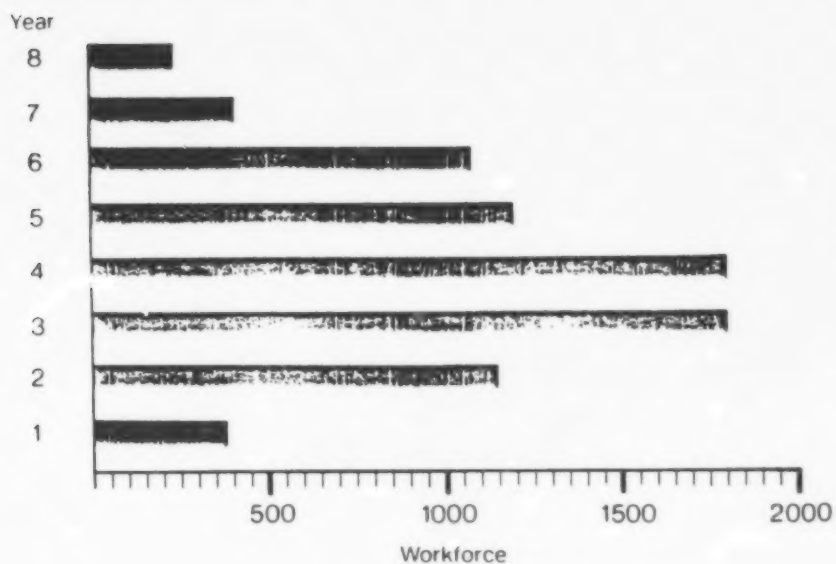
- ii) the definition and implementation of policies which will assure a maximum degree of benefit to Manitoba business and overall economic impact.

**Employment goals and hiring preference**

The construction of Limestone was estimated to provide an estimated 6,000 person-years of employment. At peak, in the summers of 1987 and 1988, as many as 1,800 men and women would be working on site. An additional 13,000 person years of indirect employment were estimated to be created as a result of activity at Limestone.

CHART 8  
LIMESTONE GENERATING STATION

**On-Site Construction Workforce Needed**



#### 4.2 Limestone Training and Employment

The first phase of activity related to employment and training measures took place between June 1984 and February 1985 and concentrated on the following issues:

- a. The development of a means of providing hiring preference for northern aboriginal people and the negotiation of such a mechanism between the Hydro Projects Management Association and the Allied Hydro Council within the Nelson/Burntwood Collective Agreement;
- b. The development of a training strategy and a training organization to produce a flow of qualified northern aboriginal people eligible for referral to the range of employment opportunities on site;
- c. The development of a coordinated employment support system to assist aboriginal people to take and complete training and obtain and maintain employment.

How were northerners, and northern natives in particular, to gain their fair share of this work? Previous dams had been built in very different economic times, when there was a dearth of skilled labour, and when tradespeople were recruited off-shore. Although Manitoba had weathered the recession of the early 1980's better than some other Provinces, unemployment in the construction trades remained high.

Furthermore, hiring, layoff, and working conditions at Limestone were governed by the Nelson/Burntwood Collective Agreement between the Hydro Projects Management Association on the one side, representing contractors, and the Allied Hydro Council, representing Unions, on the other. It was obvious that special measures would be required to provide real employment opportunities for northerners and northern natives, and these could only be provided within the Collective Agreement.

The Collective Agreement was opened for the discussion and resolution of special hiring measures in the fall of 1984. The seriousness, and the openness, with which these measures were debated and resolved by both parties cannot be overemphasized. The guarantee of employment opportunity for northern natives at Limestone springs from the special measures that were agreed to and expressed in Letter of Agreement No. 11 to the Collective Agreement, ratified by the 21 constituent Unions of the Allied Hydro Council in February 1985.

Letter of Agreement No. 11 (see Appendix F) establishes employment goals for northern native people by category of employment. For example, the goal for labourers is 45 percent. In other categories the goals are more modest, reflecting the lack of existing native journeymen in those trades. The goal for apprentices, however, is 60 percent reflecting an objective to increase the numbers of northern native journeymen in all trades. These employment goals apply to all contractors working on the Limestone site.

Hiring preference is also established in Letter of Agreement No. 11, and, for northern natives, is tied into the employment goals. Thus, northern natives are hired first, unless the employment goal in that category has been achieved or exceeded. participation rates are checked every four months, so that if northern native participation slips below the goal in any category hiring preference will be put back in place.

The second order of preference is for northern members of those Unions affiliated with the Allied Hydro Council; the third order of preference is for northerners generally. Following these orders of preference labour is hired through Union hiring halls in Winnipeg.



It should be noted that employment goals and hiring preference for northern natives were approved by the Manitoba Human Rights Commission. Also, it is essential to point out the difference between employment goals and employment quotas. The latter has the connotation that individuals from a minority group will be hired regardless of qualifications; employment goals are targets to be met, or exceeded, by people who have the qualifications to do the job.

#### The Limestone Training and Employment Agency

The means having been established to ensure that qualified northerners and northern natives would be hired, the next step was to find a means of producing sufficient numbers of qualified people in order that the employment goals would be met. The Manitoba government undertook the task of establishing training programs, and there is little doubt that the government's commitment to do so, and the manner in which it proposed to do so, was a major factor in the Management Association and Allied Hydro Council decision to adopt hiring preferences and employment goals.

It was apparent immediately that not only would the Province's existing institutions have a part to play but also that new forms of training would be required, especially for the construction jobs on the Limestone site. While a number of key government departments were involved in planning, as well as Manitoba Hydro, and input sought and received from the Limestone Partnership Directorate and Unions, it became obvious that the scope of training went beyond the mandate of any existing government agency. Furthermore, given the need to mount programs quickly and a requirement for administrative flexibility, it was decided to establish the Limestone Training and Employment Agency (L.T.E.A.) as a Crown Corporation to organize and coordinate, and, where appropriate, deliver, Limestone training. This was accomplished in March 1985.

While the L.T.E.A. is funded by the Manitoba Government, it should be emphasized that under the terms of an agreement signed in September 1985, the Federal Government will contribute an estimated \$18 million for Limestone training over the life of the project. Total expenditures for Limestone training are estimated in the order of \$50 million over seven years. (See Appendix G for federal-provincial agreement).

It was determined that three modes of training would be required: community based, institutional, and a new form of training that would seek to replicate at least some of the features of a Hydro construction site, and which has come to be called simulated training.

#### Community based training:

Consultation with the Limestone Aboriginal Partnership Board identified a need to undertake some training in northern communities: - to develop skills in the community that were needed for community based works, such as road building and other forms of infrastructure development, skills, that with further enhancement, might be transferable to the Limestone site; - to train community members to take over community jobs vacated by individuals who had found work at Limestone; - to attest the experience gained but never validated by community members especially in the carpentry trade.

In a number of communities the Agency has organized heavy equipment operating and truck driving courses integrated with productive work such as the construction of roads, drainage, repair, and the building of a sewage lagoon. The Agency pays instructor costs, trainee allowances, and half the cost of equipment, with the condition that training takes precedence over production. A number of Level I Carpentry courses have been provided, in conjunction with the Apprenticeship branch of the Department of Labour, in order to produce a body of carpentry

apprentices who will use the Limestone experience to gain journeymen status.

In 1987 the Agency worked with communities to provide training related to capital works projects planned by the Provincial Department of Northern Affairs. The intention, with such projects as the construction of a \$3 million airport at Tadoule Lake, and a \$9 million school at Shamattawa, is to ensure that community members obtain skills necessary to work on such projects, decrease the reliance on southern skilled labour, and provide the option of taking employment at the Limestone site.

Simulated training:

It became apparent that employment goals for northern people could only be met if there was no question about the skills and qualifications, reliability, and productive capacity of those individuals being trained. The demands of a Hydro construction site are heavy. Millions of dollars may be lost, both to the owner and the owner and the contractors, if the workforce cannot maintain a carefully worked out production schedule.

The Agency considered it imperative to demonstrate that its graduates were skilled, safe, and productive. To achieve this end a simulated training site was established twenty miles west of Thompson at a mothballed open-pit mining facility leased from Inco Ltd. Pipe Lake has excellent facilities: acres of open ground and quantities of different grades of gravel ideal for the training of heavy equipment operators and truck drivers, and first class covered space for classroom work and indoor training. The Agency also purchased from Inco, for one dollar, four apartment buildings, formerly the single men's residences. These buildings were renovated and serve as trainee residences.

At Pipe Lake courses have been given in concrete work (labourers), rebar, forming and apprentice level carpentry, heavy equipment operating, and truck driving; while at the residences

caterers, security guards, and bullcooks have been trained. For each course, content is developed with the appropriate Union and with the contractor, so that the latter knows exactly what skills the trainee has. Instructors are experienced journeymen who have had training experience.

Trainees are recruited in the communities, their fares paid to Thompson, and they receive \$4.50 an hour while in training with food and accommodation paid for. The only deductions are for boots and hard hat which remain the property of the trainee. However, if a trainee quits, or is asked to leave a portion of the return fare is deducted from wages. Trainees have worked seven days a week, ten hours a day for 28 days. They then return home for a week before completing a second 28 days period. Rules are strict. No alcohol or drugs are allowed, and possession of either is cause for immediate dismissal, as is smoking in bed. Doors to the residence are closed at 11:30 p.m., and anyone arriving later will not be allowed in. The bus to Pipe Lake leaves promptly at 7:45 a.m.; missing the bus leads to a loss of a day's pay; missing the bus twice leads to dismissal. All of these rules apply equally to instructors who live with the trainee as do the Agency's Executive Director and Director of Training.

Trainee caterers have prepared food, trainee bullcooks have cleaned the residences, trainee security guards have provided security, and trainee bus drivers have transported trainees from Thompson to Pipe Lake everyday.

Despite, or perhaps because of the strict regime, morale has been extremely high. To date there has been a 70% completion rate among over 1,500 trainees, and a 100% return rate from the week between the 28 day sessions. This is due to a rigorous selection process in which the communities are involved, as well as a recognition among trainees that this training will lead to meaningful well paid employment.

One of the advantages of the Pipe Lake site is that Union, community, and contractor representatives can visit the training courses and examine the quality of the training being provided. The impression that people receive upon seeing rebar trainees tying steel thirty feet in the air, in the open, at temperatures of -25C is indelible. The training programs have received the full support of both Unions and contractors, and the latter are now starting to name hire graduates of the Agency. Cooperation with and from Unions has been excellent, and in two cases, with the Operating Engineers and the Pipefitters, the Unions have taken responsibility for some of the training provision.

#### Institutional Training:

To meet the objective of preparing northern native people for post-Limestone employment, a number of programs have been established at the province's post-secondary institutions. They are:

1. The Engineering Access Program at the University of Manitoba

Modelled after a number of successful post-secondary programs for native people, the Engineering Access program recruited 30 students to date and will recruit 15 more in alternate years to a total intake of 60. This is a degree engineering program extended over one extra year to provide for academic upgrading to be incorporated. Students work 11 months a year with provision for an annual practicum experience. While employment opportunities will exist in a number of areas, Manitoba Hydro, which has its own affirmative action program, is expected to be a prime source of employment.

2. Electrical/Electronic Diploma

This three year course is provided by Red River Community



College, (located in Winnipeg), but is delivered in Thompson. Graduates will qualify for employment by Manitoba Hydro where they will undertake in house training for positions as operators on hydro-electric stations. Thirty students have been recruited.

3. Civil Technology Diploma

This three year course is provided by Keewatin Community College, (located in The Pas), but is delivered in Thompson. Thirty students are in training and will obtain employment both with Manitoba Hydro and private contractors.

4. Integrated Business Skills

This 64 week course, delivered by Keewatin Community College in Thompson, with 30 students, is designed to prepare individuals for administrative positions at Limestone with both Manitoba Hydro and contractors, as well as with northern businesses and native organizations.

5. Industrial and Heavy Duty Mechanics

Both of these courses, operated by Keewatin Community College and delivered in The Pas, recruited 15 students who will gain employment as apprentices in their respective areas.

6. Pipefitters Pre-Apprenticeship

This course, which was delivered in 1986/87 was a 31 week pre-apprenticeship course taught by a member of the Pipefitters Union. Upon completion of the course the Union took responsibility for the graduates who have become Pipefitter apprentices and will see them through their apprenticeship training.



It should be emphasized that these institutional courses are very carefully designed, and are all organized under an "Access" model, whereby financial, personal, and academic support are provided on an on-going and integrated basis.

As of March 31, 1988 nearly 2,000 students will either be in, or will have completed, training. Eighty percent of those students are northern native, 20% northern non-native. Over the seven year construction period of the dam, as many as 3,000 people will undergo training of one kind or another.

#### 4.3 Limestone Purchasing and Business Offsets

Traditionally Manitoba Hydro has had primary responsibilities for providing supplies of power adequate for the needs of the Province and for promoting and achieving economy and efficiency in the generation and supply of power. Very little attention was paid to investigate ways to maximize business opportunities for Manitoba contractors and suppliers when hydro-electric facilities were being built.

However, with the prospect of new major hydro development projects in the North, it was recognized both by Manitoba Hydro and the Government of Manitoba that there were significant opportunities to increase the level of economic participation by Manitoba companies on the Limestone project through revised policies and programs. The results it was felt on a business basis - would be very cost effective over the long run in the further development of future hydraulic resources. (Roughly an estimated 8,000 megawatts remain to be developed after Limestone).

In the past, many of the larger contractors and supplies (largely non Manitoba and non-Canadian) favored their own subcontractors and material supplies because they had built up long term business relationship. This it was important to

attempt to break down some of the institutional barriers which could prevent competitive Manitoban companies from participating in the project.

In addition good business practice necessitated the adoption of programs which reflected sensibility to economic, social and environmental concerns of Manitobans, especially those northern native groups where the major hydro development was scheduled to take place.

As such it was agreed that corporate plans be developed to maximize Manitoba and especially Northern Native and Northern companies participating in the construction of Limestone Generating Station and future generating stations, while still bearing in mind the traditional responsibilities of Manitoba Hydro regarding economy and efficiency of supply and sound business practice. It was also accepted that supply contracts should be used as leverage for permanent Manitoba investment or industrial benefits (offsets).

Organized by the M.E.A., a committee comprised of Manitoba Hydro and government officials, looked into ways to increase Limestone business opportunities for Manitoba companies. Generally speaking, the most prevalent practice of past government and major project consortiums was some form of price preference to local companies. The difficulty with any form of a published price preference was that if the price premium was known to be 5, 10 or 15%, local suppliers would start padding their bids by that amount. The net result would be significantly greater costs to the project while at the same time creating barriers to out-of-province suppliers. This was a result to be avoided.

The challenge was to develop policies and programs which would allow hydro to build Limestone at the lowest possible cost while at the same time maximizing local content.

### Programs

Manitoba Hydro and the Manitoba Government jointly adopted a number of programs to maximize opportunities for Manitoba companies.

The first included adjustments to Manitoba Hydro's purchasing and tendering policies for major development projects. (See Appendix H for details on Purchasing Guidelines).

The utility established a Manitoba content policy which stated that where price and quality were comparable, hydro would show preference to those tenders which had greater Manitoba content. If there was a marginal price difference between two suppliers with one having a greater amount of Manitoba content, the utility would be able to award that contract to the bidder with the higher Manitoba content. In all contract bids, price and content were analyzed for maximum long-term benefits.

The purchasing guidelines gave preference to companies in the following manner:

- (1) Northern Native Business
- (2) Northern Business
- (3) Manitoba Business
- (4) Canadian Business
- (5) Offshore Business

All proposed work for Limestone, under the new guidelines, were to be examined with the feasibility of creating smaller contract packages to increase opportunities for the preference priorities where performance criteria would not be compromised.

In order to encourage bidders to use Manitoba companies for subcontracts and material supply; Hydro required all bidders to set out in their tender documents.

1. All local subcontractors and all local suppliers, to be used by the bidder; and
2. Local suppliers who are acceptable to the tenderer but not included in the bid.

The tender documents clearly indicate that the level of Manitoba content will be a consideration in the award decision and that Hydro may choose to increase those levels by requesting the bidder to use alternate Manitoba companies at the higher contract price.

Hydro also adopted a corporate purchasing policy which allows for both selective tendering and negotiated contracts. This policy was intended to allow Hydro the flexibility to direct some of the Limestone work to Northern companies, especially Northern native companies. In this way, it was possible for Hydro to guarantee some part of the work would be placed with Northern companies.

In addition to the changed purchasing practices, a business information program was developed which included:

- (a) The distribution of Purchasing Brochures to Manitoba companies. These booklets describe Hydro's purchasing policies, a description of the contracts to be awarded, the tender schedule for the project, government assistance programs, and key contacts at Hydro and with government.
- (b) Business information seminars were conducted throughout the province.

Both the seminars and purchasing brochures were intended to provide early information to the business community, in order that companies could ready themselves for the Limestone project.

- (c) Also, to assist major contractors to identify and assess local Manitoba companies, detailed sourcing directories were prepared for Manitoba manufacturing companies, and all Northern companies. These directories identified companies and product services offered.

The above policies arose out of planning for the Limestone project but was subsequently expanded to include all of Hydros Northern capital works.

It should be noted that Manitoba Hydro established within its structure a corporate affairs department with a mandate to work with Northern Native companies in order to assist them in obtaining a better share of hydro business opportunities.

Some of the measures adopted include:

- alert bulletins issued well in advance of tender date to a broad cross-section of native interest groups to advise of upcoming opportunities.
- provided special written notice at time of tender to those particular native entrepreneurs/firms/development corporations which have shown an interest in pursuing contract work.
- offered assistance to those particular native firms who need help in understanding the corporate purchasing systems or who need help in interpreting the specification requirements.
- package work in sometimes less than optimum size units so as to increase access opportunities for smaller, still developing native forms.
- encourage "developmental activity" to occur, either amongst native firms or through the assistance of government agencies to improve chance of native firms participating. Encourage government to free development funds and otherwise schedule their own capital works to justify initial start-up and inventory costs.



CHART 2

| LIMESTONE TENDER CALL SCHEDULE          |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
|-----------------------------------------|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|
| YEAR<br>QUARTER                         | 1985 |   |   |   | 1986 |   |   |   | 1987 |   |   |   | 1988 |   |   |   | 1989 |   |   |   | 1990 |   |   |   | 1991 |   |   |   | 1992 |   |   |   |
| WORK ACTIVITY                           | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 |
| 1. General Civil Contract               | ■    |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 2. Sewer and Water                      | ■    |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 3. New Roofing                          | ■    |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 4. Building Completion and Repair       | ■    |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 5. Engineering Office                   | ■    |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 6. Shopping Centre                      |      |   |   |   | ■    |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 7. Additional Dwelling Lots             |      |   |   |   |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 8. School Extension                     |      |   |   |   |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 9. Moving Double Wide Homes             |      |   |   |   |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 10. Wall Cladding and Roof Decking      |      |   |   |   |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 11. Electrical/Mechanical               |      |   |   |   |      |   |   |   | ■    |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 12. Roofing                             |      |   |   |   |      |   |   |   |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 13. Heating/Ventilating                 |      |   |   |   |      |   |   |   |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 14. Intake Trashrack Guides             |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 15. Bulkhead Gate Guides                |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 16. Draft Tube Gate Guides              |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 17. Superstructure Steel                |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 18. Spillway Stoplog Guides             |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 19. Intake Gates, Guides and Hoists     |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 20. Electrical Load Centres             |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 21. Spillway Gates and Hoists           |      |   |   |   |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 22. Communications/ Telecontrol         |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 23. 4 16 kV Switchgear                  |      |   |   |   |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 24. 230 kV Switchgear                   |      |   |   |   |      |   | ■ |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 25. 600 V Distribution                  |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 26. Instrumentation                     |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 27. Alarm Systems                       |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 28. Service Bay Elevator                |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 29. Powerhouse Cranes                   |      |   |   |   |      | ■ |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 30. Main Power Transformers             |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 31. Draft Tube Gate Crane               |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 32. DC Distribution                     |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 33. Bulkhead Gates and Follower         |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 34. Generator Circuit Breakers          |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 35. Air Compressors                     |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 36. Station Service Transformers        |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 37. Control, Metering and Relay Equip.  |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 38. Excitation System                   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 39. Standby Diesel Generators           |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 40. Spillway Gantry Crane Modifications |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 41. Spillway Stoplogs                   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 42. Trashracks and Follower             |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 43. Supervisory Equipment               |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 44. Draft Tube Gates                    |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 45. Construction Insurance              |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 46. Security                            |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 47. Catering - Stage III                |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 48. Piping Fitting Valves Pumps         |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 49. Miscellaneous Steel                 |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 50. Conduit and Cable                   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 51. Miscellaneous Supplies, Materials   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 52. Cement                              |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 53. Sewer and Water Pipes               |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 54. Reinforcing Steel                   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 55. Lighting Fixtures                   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 56. Architectural Finish                |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 57. Cable Trays                         |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |
| 58. Station Tools and Equipment         |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |      |   |   |   |

## Legend

Dates are expressed in quarters of a calendar year.

1st Quarter: January-March

2nd Quarter: April-June

3rd Quarter: July-September

4th Quarter: October-December

Note: Dates for calling tenders are approximate and may change



### Business Offsets

The development of "spin-off" or "off-set" arrangements has been of significant benefit to the overall approach of maximizing Manitoba content.

A number of offset agreements have been formalized in connection with the Limestone generating station in order that immediate and tangible benefits be derived for future economic activity.

Among other things, the Industrial benefits agreements (both negotiated and open competitive tendering) include provisions for:

- i) the awarding of a specific large-scale supply contract (turbine and generators) in conjunction with a corporate commitment to undertake capital investments which will trigger additional manufacturing facilities and/or related businesses;
- ii) a specific effort at establishing Northern Native-Owned businesses;
- iii) corporate investment in knowledge-building research and technology activities designed to provide a foundation for benefits that will out-last the agreement itself;
- iv) specific commitments to training, skill development, technology transfer, and the creation of high technology jobs;
- v) liquidated damage provisions which specify that a corporate failure to implement the described investments results in a loss of benefits to the Province and a resulting compensation to the Province (through the MEA) for that loss. (Each agreement has specific schedules for this compensation).

For specific example an agreement with General Electric Canada has five components:

1. Direct investment of \$10 million.
2. A \$2 million program related to northern native-owned businesses.
3. A minimum of 15% Manitoba content in the turbines and generators with a technology transfer program to try to increase the Manitoba content to 25%.
4. \$100,000 research grants to each of the HVDC Research Centre and the Microelectronic Centre.
5. A minimum of 100 new high technology jobs, likely in the aerospace industry.

The agreement is intended to produce 1,000 direct person-years of work in Manitoba (the equivalent of the amount of labour involved in producing the ten sets of turbines and generators) within the term of the turbine and generator contract (i.e. essentially to 1993). Target schedules for implementing each component are appended to the agreement.

The results of these new policies has recorded the following:

- The estimated Manitoba content on the Limestone project is approximately 90 percent - compared to the 50 percent experienced on the Long Spruce project (the previous generating station built).
- Due to a number of factors, the Limestone project is about one billion dollars under budget; the revised purchasing guidelines created a much desired competitive environment.

- Low bidders have undertaken commitments for increased investment and economic activity in the province.
- Contracts have been awarded for Northern native business-with support and assistance from the utilities affirmative action program - at little short-term increased costs.
- Feedback from the business community on these purchasing policies has generally been favorable, both locally and outside the province.
- The open competitive tendering system has been retained without any provincial trade barriers.

## CHAPTER 5

### REPORT OF THE PREMIER'S COUNCIL

Recently, the Premier's Council of Ontario released a report on the economy of Ontario, titled "Competing in the New Global Economy".

The Council is an advisory board established in 1986 by the Premier of Ontario and is made up of 28 members representing business, labour, education and other important interests in the province.

The report examined the state of the economy to "determine how to enhance its strength while addressing its weaknesses and develop policies for the future". Included in Volume II of this report, which summarizes the research undertaken by the Council's study team on the competitiveness of key industry sectors, are two chapters relevant to this project.

Chapter XIII is on the Nuclear Industry as part of the state of High Growth and Emerging Industries.

Chapter XV is a special study titled "Building on Ontario Hydro's Role in Provincial Development".

The following is a brief review and evaluation of the observations and conclusions of the above chapters. In general, both chapters suffer from inadequate research and reflect insufficient knowledge in policy matters affecting Ontario Hydro in its major mandate of providing reliable supplies of electricity at minimum cost.

#### 5.1 The Nuclear Industry

The chapter purports to "examine the origins, growth and prospects for the Canadian nuclear industry in some detail and look more briefly at the industrial potential of other nuclear

industry products." It also discusses "several alternative directions for the industry, including sustaining the existing base through new Canadian nuclear plants, investing in cost reduction opportunities to help win export orders, and pursuing diversification opportunities in related business".

Much of the chapter is descriptive of the history of the development of the Candu reactor for the production of electricity. But there is a basic inadequacy in reporting on the key role of the Government of Canada and its agency, the Atomic Energy of Canada (A.E.C.L.) in this area. It refuses to analyze whether the estimated \$4.0 billion spent by Ottawa in nuclear energy R & D was well spent and whether there has been a positive benefit/cost result. On the future function for the federal government, the report is silent other than recommending privatization and joint venturing in order to secure the Candu's future.

Others could suggest that Ottawa's decision to privatize the only profitable division of A.E.C.L. (the Radiochemical Division becomes Nordion and the Medical Products Division becomes Theratronics) lead to a low priority to the continuation of funding A.E.C.L. by the federal government.

The statements on the potential for nuclear generated electricity in the Canadian domestic market are overly optimistic. There is the suggestion that a number of provinces, other than Ontario, might offer potential for the future sale of Candu reactors. Saskatchewan, Newfoundland, Quebec and New Brunswick are cited.

Clearly given the extensive untapped and less expensive alternative of hydraulic energy in both Quebec and Newfoundland, there is no evidence of interest in pursuing nuclear options in those provinces. In fact Quebec as a result of firm electricity export sales in the United States is proceeding with the further

development of James Bay water resources while Newfoundland is currently involved in discussions with Quebec and others on future Churchill Falls hydraulic development.

As an economic method of generating electricity, nuclear possibilities in Saskatchewan cannot be justified. The province is currently developing additional thermal capacity (The Shand 300 megawatt station), after rejecting hydraulic purchases from Manitoba which would have guaranteed electricity prices significantly less than what could be domestically generated through thermal.

Regarding current initiatives on further nuclear based electricity in New Brunswick, both the Chairman of N.B. Power and the Premier have stated that nuclear generated electricity has been put on hold indefinitely. Recent reports indicate that if the Government of Canada is willing to provide generous financing on further nuclear development in New Brunswick, then the province and the utility may be agreeable.

More realistically, it would appear that the only domestic energy market source for future CANDU operations and additional nuclear electricity capacity is the province of Ontario.

The discussion on the structure of the nuclear industry has not been fully considered. Any past requirement by A.E.C.L. and Ontario Hydro that they not be held captive to one supplier has been extremely limited, and for good business reasons. Both companies have developed purchasing arrangements with one supplier when price and quality conditions have been negotiated and met.

The report chooses not to discuss the implications of the privatization of the two former divisions of A.E.C.L. - Nordion and Theratronics - and what impact they could have on both Ontario Hydro and other aspects of the nuclear business in



Ontario. For example A.E.C.L. in accordance with current agreements is the sole marketing agent of Cobalt-60 isotope production from Ontario Hydro's nuclear facilities. Changes in A.E.C.L.'s mandate - through privatization - may adversely affect the utility's very successful efforts in this area.

A.E.C.L. projections for Candu market share and future opportunities are accepted without any independent analysis or detailed discussion on why past efforts in promoting this Canadian technology have been so unsuccessful.

The report suggests in a curious double talk that a newly developed technology - a single 1200 megawatt - might have greater appeal in Ontario, "given that major segments of the population, elected representatives and review agencies such as the Ontario Energy Board, are concerned about Ontario Hydro's apparent over commitment to nuclear power, especially in light of the current supply and demand situation. A key concern is the large financial commitment involved in developing a four unit station such as Darlington. Such a large commitment of funds may not be politically acceptable in the future".

The logic behind these observations is not apparent, particularly in the context of higher risks associated with larger units.

The chapter concludes by stating that the future of the Canadian nuclear industry is "open to speculations" and is dependent on a number of key policy issues. Regretfully the wrong questions are posed. The alleged indecision in the implementation of the technology in Canada is attributed to the fact that "the industry has not developed strong political linkages in the country resulting in an ill-defined and often unclear mandate". Clearly a better analysis than the above is required in assessing the past, present and future of the industry.

## 5.2 Ontario Hydro's Role in Provincial Development

This chapter of the Premier's Council report accurately notes the important areas of economic activity where Ontario Hydro plays an important role - particularly in purchasing power and research and development activities.

It points out that:

"Ontario Hydro's primary goal is to provide safe, reliable and economical electric power to the province. It must never lose sight of this central mandate, and it will be by achieving this mandate that Hydro can make its most substantial contribution to provincial economic development".

This statement and observation does reflect the proper criteria upon which the utility must be evaluated and judged. But having set out the basis for assessment, there is no attempt made to measure the utility's performance in achieving its mandate.

As was shown earlier in section 2.3. Ontario Hydro in terms of indigenous resources, has performed exceedingly well over its history, both in comparison to other Canadian utilities and to other jurisdictions in the world's developed economies. This performance applies to price and reliability - both being necessary for sustained economic growth and development.

The rest of the report then deals with how the utility, because of its size and activities, can more effectively assist the province in the achievement of "economic goals beyond its mandate".

In outlining the areas of "Hydro's points of Economic Leverage" at no time is the question asked whether there are additional costs to be born, and if so, where does the responsibility for these costs rest with the utility or with the government? These queries are studiously ignored.

The four areas of leverage discussed are:

- Procurement of Ontario goods and services,
- Spin-off business from its core activities,
- Creation of new technologies and products (R & D),
- Electricity rate reductions for targeted industries of regions.

A detailed commentary with policy recommendations is provided for the first three areas noted above. Electricity rate reduction is briefly and erroneously referred to. Incorrect information is included - there are no regional rate reductions for economic development purposes in Ontario Hydro's industrial and commercial rate structure. One program affecting the pulp and paper industry - in which one firm is participating - relates to an incentive to advance the introduction of thermal mechanical pulping which is a more energy efficient process and reduces pollution although electricity requirements are substantially higher.

#### Procurement

The report notes that Ontario Hydro is one of the province's largest single buyers, with procurement contracts (excluding fuels) totalling around \$400 million to \$800 million a year, and without new major supply programs are expected to continue at that level for the next five years.

Roughly 70 percent of the utility's purchases are made in Ontario with 12 percent from other provinces and 18 percent from other countries. This respective provincial market share compares well with other utilities in Canada.

When the observation is made that the procurement area, as a leverage for further provincial economic development, is probably under utilized relative to what could be achieved, there are no

specific objectives outlined. For example:

- Should there be attempts at a higher Ontario content value, i.e. more "made in Ontario"? If so, how should it be achieved? Is there a cost?
- Should there be better efforts at more regional purchasing? Which regions? Should 'local content' premiums be greater than the current three percent? If so, what would be a more effective level? The report is silent in these areas.

It does however call for 'strategic procurement' in which "the local goal is to assist local suppliers, through procurement, to develop and test new products, broaden or deepen their experience, reduce their cost and generally become more competitive in world markets". This objective is indeed worthwhile - provided that this can be undertaken "without too much extra cost to the consumer".

The more central point for discussion is whether there is sufficient scope under the traditional requirements for a utility like Ontario Hydro, for such activity to take place, which would both be cost-effective for the utility and provide a competitive benefit for a domestic firm. Clearly if there are such areas, they would be extremely limited as part of the overall \$700-\$800 million annual procurement requirements of the company.

The example provided in this chapter where it is claimed that strategic procurement has been successful, is the process followed by Hydro Quebec in contracting out their hydraulic engineering services (resulting initially in the growth of Lavelin and S.N.C. - Quebec based engineering firms). This is contrasted to the in-house engineering capacity developed by Ontario Hydro in their nuclear generation process.

In one way this is comparing apples and oranges. In any case when compared with the U.S. utility experience of contracting out its nuclear engineering requirements to private engineering firms - with massive over runs and bankruptcies - the Ontario experience has been tremendously successful with low prices and a highly reliable nuclear electricity system. Ontario Hydro has successfully avoided the U.S. experience where private contractors designed and constructed the nuclear plants leaving the utility with all of the operating responsibilities.

Still it may be possible to more systematically review future procurement requirements which may require more applied research and development assistance for technological superiority in world markets. The question then becomes who should pay the "additional costs" for this strategic procurement - the ratepayer or the taxpayer?

Regretfully the one major area in which the report calls for a development commitment by Ontario Hydro, is the development surrounding flue gas desulphurization, i.e coal scrubbing. While the utility will require 6 to 8 scrubbers in the future - both the technology and the products are well established, particularly in the U.S. market.

#### Spin-Off Business

The report documents the significant success of the New Business Ventures (N.B.V.) a separate division within Ontario Hydro established in 1984 to market material and other by-products of Hydro's electricity generating activities (mainly nuclear) as well as consulting and training activities directly related to the utility's operations.

Following a review of N.B.V.'s markets, the report recommends, without any evidence, that N.B.V.'s future growth will be limited unless changes are made to allow the creation of subsidiaries and joint ventures.



It suggests that a dichotomy exists regarding N.B.V.'s primary role. "Is the division to be a marketer of Hydro byproducts and expertise or is it to function as a truly independent business driven by market opportunities". The report's conclusions suggest an orientation towards the latter role.

However the very success of N.B.V. is largely caused by its close lines with the parent company. To the degree it becomes more independent and separate then the very raison d'être for this early success may become restricted.

Whatever organization is determined in the future, it cannot, as suggested in the chapter, be owned by N.B.V. employees and outside investors and maintain the same successful relationship with Ontario Hydro.

One important area affecting the continued success of N.B.V. - but not mentioned in the chapter - is the privatization of the A.E.C.L. division responsible for the marketing of N.B.V. products - particularly the profitable COBALT-60. Under the current agreement between Ontario Hydro and A.E.C.L., only A.E.C.L. can market these products, with the utility having a kind of veto on any new arrangement in which A.E.C.L. sells these particular marketing functions to any firm.

#### Research and Development

Ontario Hydro undertakes the largest research and development effort of any North American utility with a current budget of about \$100 million. (The report mistakenly refers to the larger I.R.E.Q. R & D organization in the province of Quebec as being 'closely tied to Hydro Quebec'; it was in fact created by Hydro Quebec and operates for all intents and purposes as a subsidiary operation).



The majority of Ontario Hydro's R & D function - past and present - has been in the nuclear generation area (35% - 45%). This is understandable given the indigenous Canadian-based technology. The general question on future R & D activities is the degree to which some efforts could perhaps lead to greater support of Ontario industry in the promotion of economic development.

The report overestimates the degree to which that effort can in fact take place, particularly in product development. It states, " ...given the paucity of large R & D facilities in Ontario and Hydro's broad capabilities, it seems logical that Hydro's Research Division should be encouraged to play a greater role in provincial economic development".

But then the report goes on "... Precisely what that role could be is something Hydro should study." This represents yet but another example of a basic confusion on the central mandate of Ontario Hydro and other objectives related to the provincial economy. If these can be accommodated within the central mandate at no significant additional cost then obviously these should be pursued. In most cases - particularly in the R & D area, there would be additional costs, which should be borne by the taxpayer (Government of Ontario) and not the ratepayer (Ontario Hydro).

This chapter on the role of Ontario Hydro in provincial development efforts suffers conceptionally from lack of understanding between the respective responsibilities of the utility and the government.

The report does not show, as alleged, that there is great potential for using Ontario Hydro as an agent of economic development beyond its central mandate.

## CHAPTER 6

### SUMMARY AND CONCLUSIONS

#### 6.1 Utility Mandate

Ontario Hydro has obviously played an important role in the economic growth of the province of Ontario. This briefing paper has reviewed the utility's operations and activities in that context.

In addition, attention has been focused on the degree to which the company has been, or should be, used as a more active catalyst in the management of industrial growth - through pricing policy, procurement programs, capital expenditure plans and other more specific activities related to Hydro's activities.

The principal mandate of Ontario Hydro has been to provide reliable, safe, and economical electric power to the province. In the context of further economic development of the province, this central mission of the utility will have to be reemphasized.

In clarifying the role of the utility, there are three areas for attention:

1. Availability of power supply
2. Reliability of power supply
3. Stability of rates in power supply

#### Availability

Whether there are available or adequate energy supplies for enhanced growth may become a major problem in Ontario in the future (depending on decisions to be made over the next 6 to 12 months).

It is recognized that uncertainties are inherent in any attempt to forecast future electrical requirements for residents

of the province. It is a complex exercise, subject to a changing economic environment and numerous other factors. These include energy price trends, population flows, technological change, and economic trends.

In the late 1970's, most North American utilities (like everyone else) did not anticipate the impact of O.P.E.C. oil cartels, energy price movements, and conservation practices. Based on past experiences, the companies simply extrapolated for future consumption movements - and given the long lead times required - built additional base load generating stations.

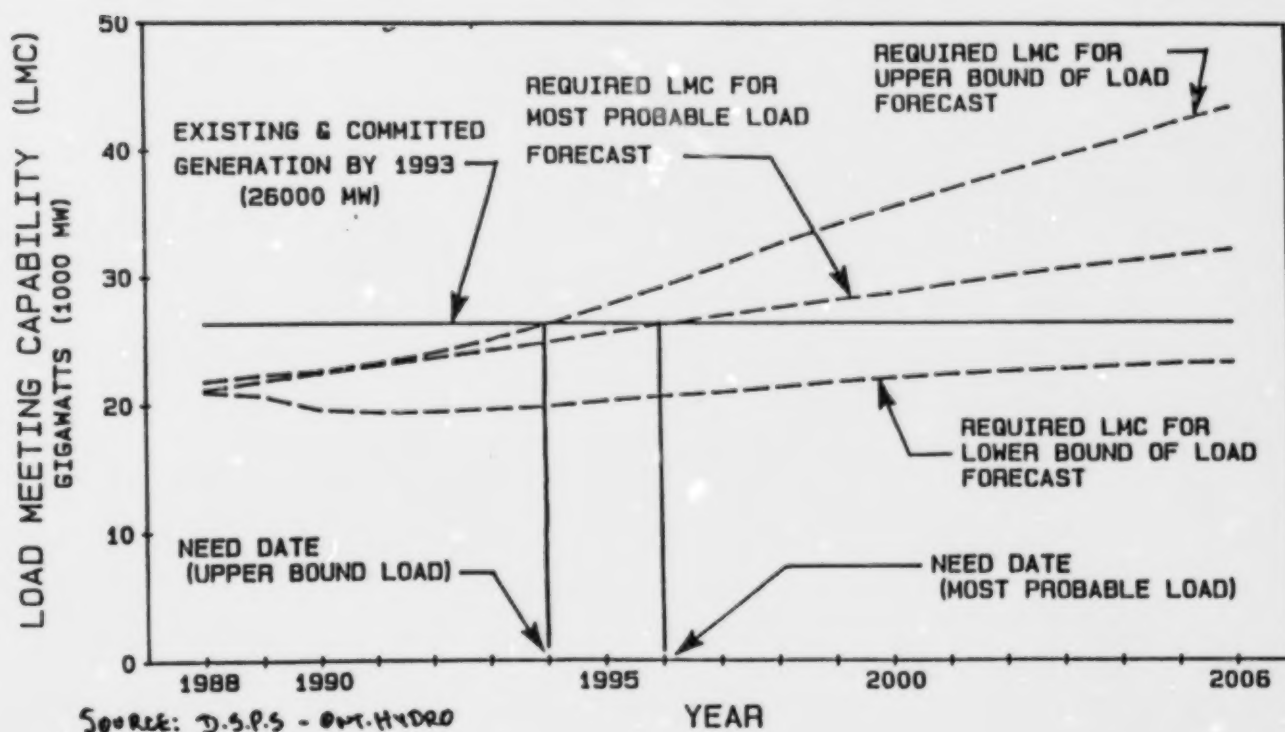
Of course that demand never materialized, and consequently, considerable electrical energy surpluses were the characteristics of the 1980's. However they are currently being eliminated with many Canadian utilities introducing certain financial programs to increase energy consumption of what was considered "sunken" investments.

More specifically though, Canada, led by the province of Ontario, is currently in the seventh consecutive year of economic expansion (and yes, most economic forecasters have been informing us each year for at least the last five, a recession is around the corner...). In any case even if a short-term dip in the economic cycle took place, the "dip" in energy demand would be a short-lived experience with major demand increases taking place shortly thereafter. This was characteristic of the 1982 recession and reflects an important dichotomy for economic interpretation, i.e. the difference between an economic flow and the existing economic stock.

In Ontario, load growth demand for electricity during the period 1983 to 1987 was projected at a 3.1% annual increase; in fact, actual growth went up an average of 4.3% each year.

Based on what utility officials have deemed a most probable load forecast, additional demand supply resources are stated to be required starting in 1996 (i.e., decreased demand as a result of certain initiatives now taken, or additional supply reflected in more generating facilities built, or purchases from other utilities). Apparently, because of the continued increases in electricity demand, additional resources may be required as early as 1993.

**CHART 10**  
**ONTARIO HYDRO - NEED DATES**



There is insufficient time to build a major new generating station of any type to meet this electricity requirement in the province for the immediate future. It is generally accepted that 12 to 15 years are required to build new generating facilities with transmission lines and distribution stations.

The situation in many parts of the United States, particularly in the north-east, is even more serious. In those jurisdictions, no planning is currently taking place on additional electricity requirements in the form of supply scenarios to meet this anticipated growth - let alone facilities needed for replacing aged or obsolete stations now in use. The U.S. Department of Energy has been warning for sometime now of the real possibility of blackouts, brownouts and electricity rationing required for major U.S. urban centres in the early to mid 1990's.

Ontario Hydro has presented a detailed proposed planning approach on future strategies, titled Meeting Future Energy Needs: Draft Demand/Supply Planning Strategy (D.S.P.S.).

This report has been reviewed by interested Government of Ontario Ministries and by an independent panel of technical experts. A separate independent expert review is currently taking place on Ontario Hydro's cost estimates for CANDU reactors.

D.S.P.S. has also been subject to Ontario Legislative Hearings from the Select Committee on Energy. And their report and recommendations have just been made public. Ontario Hydro's Board of Directors and senior management are now expected around June 1989, to recommend certain courses of action for the future in order to meet the utility's mandate and responsibilities.



It is not the purpose of this briefing paper to discuss and evaluate the various options and strategies proposed by Ontario Hydro to meet future requirements. Appendix I outlines in table form the various strategy implementations under various load growth assumptions. In addition, the utility's short-term program is presented in terms of committed additional resources, existing systems improvements and new resources being considered and planned for a particular time schedule.

However, it is apparent that demand options, i.e., load shifting and energy improvements, will have to be implemented sooner than previously planned and will have a larger role in meeting future electricity requirements in Ontario than previously intended or thought likely to take place. If current load demand trends continue, there is inadequate time to plan and implement major base load generating facilities or consider major electricity purchases from neighboring systems in Quebec or Manitoba.

### Reliability

The importance of the electric system reliability in the province of Ontario was noted earlier. Customers, whether residential, commercial or industrial, have come to expect a very high standard for receiving energy from Ontario Hydro. There has been no recent history in the province in which some customers' loads could not be served during system peak load periods due to voltage reduction to lower demand. And other than this past summer (1988), there have never been appeals to cut load voluntarily or even interrupt connected loads.

For future investment related towards industrial growth and development, reliability in the generation and transmission of distribution of electricity will become a major factor in North America; its importance should not be underestimated.



Reliability of a utility's system has drawn increased attention recently in the Province of Quebec because of four major blackouts in Hydro Quebec's system in six months during 1988. Furthermore in the first 10 months of 1988, 19,100 blackouts have been reported across Quebec which is being attributed to two factors other than climatic conditions:

- demand for electricity is growing faster than the company's ability to supply it, and
- the system is being stretched to the limit without adequate or proper maintenance.

Notwithstanding that the Quebec and Ontario systems are different in important ways, it is interesting to note that Ontario's last major blackout was more than 20 years ago and Quebec has had seven in the last four years. Also in the first 10 months of this year Montreal had 1,514 power failures lasting longer than 90 seconds; Toronto had 298.

There are two further issues which may affect the reliability of the Ontario Hydro system:

- Replacement or refurbishment of many of the utility's existing generating plants will be required in the future. Coal plants are depreciated and remain operable for 30 to 40 years, nuclear plants for 40 years, and hydraulic for up to 80 years.

Rehabilitation, replacement or refurbishment must be carefully planned to ensure that a reliable supply is maintained during the periods when the plants are taken out of service.

- The related factor is the system capacity reserve measurement which for Ontario Hydro has been deemed to be 24%. If the reserve level drops considerably, then it is possible for the system reliability to deteriorate. It is claimed that Hydro's reliability target has been exceeded, in part, due to the current reserve level.

### Stability of Rates

Ontario Hydro has performed well in the past in providing relatively stable, low cost energy in comparison with most other countries. Residential, industrial and commercial customers in the province continue to be provided with low energy rates.

The only jurisdictions in Canada which have better rate structures are provinces with extensive indigenous hydro resources - Quebec, Manitoba, and British Columbia - or indigenous low cost fossil resources - Alberta.

Low electricity rates have been cited extensively in the past in attracting industry to locate in certain regions. While this may have been an important factor in the past, it is much less so today. For most industries there are other more important considerations affecting the location of a particular firm. However the cost of electricity remains an important factor affecting existing firms and industries and their ability or desire to expand investment.

Continuation of the current low rate structure will provide a major challenge in the future for Ontario Hydro.

First there is perceived to be a greater responsibility for the utility in meeting the community's standards for operational purposes. Thus the "costs of doing business" will increase and be impacted by higher standards related to the environment, to safety, and to more extensive planning and public consultation and involvement in future utility operations.

In addition, while the "verdict" on more cost-effective demand scenarios is still out, all supply options being considered will have a much higher marginal cost than previous resources built, and thus the average cost curve for the company will have a tendency to escalate more in the future.

## 6.2 Economic Role

It was noted in Chapter 2 that the "Power at Cost" principle of Ontario Hydro is not precise and has been subject over the years to certain discretion in the application of specific activities of the utility.

Nonetheless, the general notion of a public monopoly attempting to implement a mandate of providing energy efficiently, reliably and safely, should consistently relate to a fiscal framework that accounts for all costs and provides sufficient reserves for long-term debt obligations and rate stability.

In the implementation of a revenue/expenditure program, the long-term business nature of the company should be recognized. There are two dimensions:

- a) The structure of the industry is capital-intensive with the assets being depreciated at schedules from 30 to 40 years (thermal stations) to 60 to 70 years (hydraulic stations). This characteristic of all public utilities in Canada, including Ontario Hydro, means that a large degree of debt financing is appropriate, with less revenue collected from its current customers through rate charges. Electricity pricing policies should ensure that customers pay the cost of providing service in the given year that reflects the cost of facilities used in that year. A continuing issue relates to the trade-off between rate and borrowing levels and the degree to which costs are more weighted towards current customers as opposed to future customers. Many past discussions in this area fail to appreciate the capital-intensive nature of the industry and the intergenerational responsibility of the burden of utility costs.

- b) Activities of the utility should relate to the fact that it provides a vital, monopoly service for the residents of Ontario; furthermore it is owned by these same residents, through the Government of Ontario. Thus the wider social responsibility and long-term business nature should be acknowledged. Measures have to be evaluated on the basis of long-term rather than short-term costs and impacts.

Working with the above philosophical approach, the Board of Directors of Ontario Hydro thus has to consider in its decision-making framework the long-term commercial nature of the utility's business.

It is clear that any Government of Ontario directed policy for Ontario Hydro, should more properly account for those costs on behalf of the taxpayer, and not force them as a responsibility of the ratepayer. Thus if the Government of Ontario desired to use Ontario Hydro as an agent for counter cyclical policy, it clearly should have the right to do so. At the same time, it should also assume any extra costs associated with this direction.

Further to the above, Ontario Hydro has never used a program of industrial incentives (general or regional) as a conscious policy for economic development purposes. A number of discount plans have been introduced in recent years because of seasonal or structural patterns - in order to obtain a more efficient use of the utility's generating plants (for example the interruptible summer rate program, and the thermal mechanical pulping program).

But the utility has quite wisely avoided the distortions in cost accountability due to cross-subsidization among different customers and customers in the same sector.

In this respect, no evidence exists to support a current popular perception, that electricity rate discounts are successful in attracting firms or companies as part of a regional development policy. To the degree that governments wish to advocate the above policies, then any government program for reduced power rates related to a region or an industry, should be applied as a cost to the taxpayer and not to the utility and the ratepayer.

Section 6.1 of this Chapter emphasized the prime mission of the utility to provide low cost, reliable energy to the people of Ontario. In doing so, it should consider a number of new policies and programs to more effectively enhance its economic participation in the Ontario economy.

#### Procurement and Purchasing Guidelines

A number of revisions in current policy are suggested to open up opportunities for subcontractors and break down certain institutional barriers which have prevented benefits from being accrued to certain groups and regions of the province. On an overall basis, these proposed changes would not have a dramatic or major impact on current procurement trends. What they can do is provide greater opportunities for northern and eastern regional business and for Northern Native groups, with regard to Hydro's requirements for goods and services.

New purchasing guidelines should apply to on-going operational needs, but would have a much greater impact with any new generating and/or transmission project being considered for the future needs of Ontario Hydro.

We have seen from Chapter 4 that Manitoba Hydro has been moderately successful in its program associated with the construction of the Limestone Generation Station to promote, foster and enhance economic activities within the province. Ontario Hydro should consider similar initiatives so that



northern and eastern region businesses in the province and Northern Native Groups have greater opportunities to participate in capital works projects and the ordinary purchasing requirements of the utility.

The following guidelines are recommended:

1. Corporate purchasing priorities will be applied so as to give preference to Native operated businesses in Northern Ontario and to Northern and Eastern Ontario businesses over others. Primary factors to be considered in any preferential purchase decision will be the quality of goods and services, attainment of schedule and the degree of any price differential.
2. Prior to developing tender specifications, Ontario Hydro will attempt to identify for each contract, possible opportunities for Northern Native, and northern and eastern businesses. Consideration will be given where reasonable and practical to scoping project activities so as to create contract packages which are suited especially for these companies, provided that in doing so:
  - a) there is no adverse affect on project schedules or the quality of the delivered product or project, and
  - b) the total cost of re-scoped contract packages for either Northern Native or northern and eastern businesses does not increase beyond an acceptable percent of that anticipated by application of standard procurement methods.
3. Where feasible, Ontario Hydro will employ tendering methods such as the following to encourage Northern Native and northern and eastern regional business participation in Hydro works:
  - a) open bidding with Ontario content requirements (as set out in Section 4.0 below);
  - b) tender calls restricted to Northern and Eastern Ontario regions.



- c) tender calls restricted to Northern Native businesses.
- d) negotiated contracts.

A decision as to the appropriate tendering method will be predetermined for each contract package. Use of the methods outlined in (b), (c) and (d) will be dependent upon the nature of the work to be performed or the goods to be purchased. These tendering methods will be applied on a selective basis where conditions warrant their usage as tools to achieve Corporate objectives. Where Hydro elects to either invite tenders restricted to Native businesses or to negotiate contracts with Native businesses, an award will be made, provided that such business can undertake the work for a price which is reasonably comparable with the estimates or known market price for the work. In such cases, the requirement for a performance bond will be waived.

4. Tender documents will include Northern Native and Northern and Eastern Ontario content objectives, requirements and conditions, as follows:
  - a) in order to ensure that tenderers search out northern and eastern regional services, the tendering documents will indicate that maximization of Native, northern and eastern sub-contractors' and suppliers' involvement is an Ontario Hydro objective and that content will be a consideration in the award of contracts;
  - b) tenderers will be advised that in the evaluation of content, priority will be given to Native business involvement, followed closely by northern and eastern regional business involvement. Content evaluation will be assessed in terms of economic contribution, with consideration to factors such as number of employees, asset size, the business nature of the company (i.e. manufacturer, assembler, or distributor) and geographic location;

c) tender documents will include the following:

- a list of all phases of the work that will be sub-contracted along with the names and addresses of proposed sub-contractors;
- a list of major materials/equipment to be purchased along with the names and addresses of proposed suppliers;
- a list of Northern Native, and northern and eastern regional companies acceptable to the tenderers who have submitted bids; but were not selected by the tenderer, but which are capable of supplying the goods or providing a service. Supply from these sources will be included as an incremental price for the same goods and services. Ontario Hydro can exercise discretion in awarding a contract on the basis of the base price with selected items from the alternative Ontario sources as set out in an Ontario suppliers list. Supply from these sources shall be included as an additional cost of the tender.

d) In addition, tenderers will be invited to set out in writing all aspects of the work or services which are to be done or supplied by Northern Native or northern and eastern regional sources as well as purchasing policies and objectives that will apply during execution of the contract. In any post-tendering pre-contract discussions, detailed inquiries will be made as to the use of Ontario components and services.

e) Ontario Hydro will monitor all contracted Ontario and Northern Native content purchases for compliance to the original bid. Compliance procedures will be outlined in the tender documents.

5. Ontario Hydro will seek to pro-actively encourage "developmental activity" whereby Northern Native businesses might better respond to opportunities as follows:

- a) information will be provided to Native communities and organizations with respect to project plans as early as possible so as to give Native businesses adequate time to assess and respond to opportunities (Alert System);
- b) Ontario Hydro will assist Native business managers to interpret specification requirements and/or become familiar with bidding procedures;
- c) Ontario will cooperate with Government Agencies to coordinate capital project planning with a view to sequencing work in order to promote longer term viability for Native businesses.

To implement these purchasing and related guidelines, a special unit in the Corporate Relations Division of the Company should be established with the above noted mandate.

#### Training and Employment

Ontario Hydro currently undertakes very few activities in the area of training and employment measures for operating and for major generating and transmission projects.

In the past no responsibility has been assumed in ensuring the development of a coordinated employment support system to assist individuals and communities in areas where Hydro has had a significant impact -- especially for the North and for Northerners of Native ancestry.

At present, major private sector firms and companies particularly in energy and mining, recognize and accept the notion that their long-term cost of doing business has to include some responsibility for a training and employment strategy related to their activities. In the same way, there is an equal or greater responsibility by Ontario Hydro to introduce and develop such a strategy for certain regions of the Province (North, East) and for certain groups to produce qualified and skilled laborers who can participate and share in the opportunities related to Hydro growth.

Ontario Hydro should enter into detailed discussions with the Ministries of Skill Development, Northern Development and Mines, Education and others, to jointly develop plans and programs to provide special measures for training and employment activities related to Hydro's major projects in generating and transmission.

Furthermore, officials of the utility should open up negotiations with its associated trade unions to facilitate a means of providing hiring preferences for qualified Northerners of Native ancestry -- along the lines of the experiences identified with Manitoba Hydro and the Limestone Generating Station.

#### Business Offsets and Research and Development

Ontario Hydro does undertake large annual procurement contracts and thus plays an important role in the economy of the province.

Given traditional utility requirements, there may not be sufficient scope for strategic local procurement under which a systematic effort is undertaken to assist local suppliers, through procurement, to develop and test new products and processes.

However, some effort should be initiated in this area to possibly enhance local benefits, both economically and technically. This would require greater co-ordination and integration of the decision-making process by senior management at the utility, especially to evaluate any longer term and additional costs attributed to the ratepayer as a result of adopting this particular strategy.

The above observation is directly relevant as well, to the scientific research and development activities of Ontario Hydro. R & D efforts are undertaken to support and enhance the

utility's activities in generation, transmission and distribution.

Very little commercial product development exists. However, again in a limited way, the company can be supportive of business and of educational institutions by identifying specific opportunities that also relate to the utility's future requirements.

Finally, Business Ventures development within Ontario Hydro has clearly been more successful over the last number of years as a result of concentrated efforts. It was suggested that while the new Business Ventures Division can contribute to further Ontario economic growth, it cannot function successfully as a separate and independent agency. Its success has come from exploiting the close ties within Ontario Hydro itself, thus other than a re-organization change in reporting relationship, it should maintain its current role within the Ontario Hydro structure.

APPENDICES



APPENDIX A

## TERMS OF REFERENCE

### Ministry Objectives

To review how Ontario Hydro's policies and programs will influence economic development in the Province and to assess alternative strategies for better harnessing Hydro's potential to stimulate economic activity in the Province.

### Contractor's Task

The contractor will be required to:

- a) Provide a description and assessment of Ontario Hydro's current and future potential role in provincial economic development. This will describe the general economic impact and industrial opportunities available as a result of Ontario Hydro's activities. This will contain a description and commentary on the basic classical model for Hydro - providing electricity at reasonable prices and with high reliability and its compatibility with a more proactive role for the utility.
- b) Review of Ontario Hydro's policies and procedures as they affect economic growth, including research and development, procurement, business services, discount pricing for industry and training and employment.
- c) Provide a comparative review of the recent experience of other Canadian utilities, including but not limited to Hydro-Quebec, British Columbia Hydro and Manitoba Hydro, in fostering economic development and their applicability to Ontario Hydro.

- d) Discuss the recent specific policies and procedures of Manitoba Hydro in the building of the Limestone Generating Station.
- e) Assess the recommendations of special study XV titled "Building on Ontario Hydro's Role in Provincial Development" in "Competing in the New Global Economy" Report of the Premier's Council: Industry Studies Volume II.
- f) Discuss alternative economic development roles for Ontario Hydro and provide an assessment of their applicability to the Province of Ontario.

**APPENDIX B**

**TABLE I****TOTAL ASSETS**

| (Millions of Dollars)           | 1986-87  | 1985/86  | 1984/85  | 1983/84  | 1982/83  |
|---------------------------------|----------|----------|----------|----------|----------|
| Ontario Hydro                   | \$31 357 | \$29 320 | \$27 301 | \$23 194 | \$20 721 |
| Hydro Quebec                    | 30 588   | 29 183   | 27 129   | 25 179   | 23 169   |
| British Columbia Hydro          | 9 802    | 10 472   | 10 579   | 9 593    | 8 910    |
| Transalta Utilities             | 3 700    | 3 736    | 3 517    | 3 296    | 2 821    |
| Manitoba Hydro                  | 3 240    | 3 129    | 2 924    | 2 934    | 2 884    |
| Saskatchewan Power              | 2 857    | 2 820    | 2 556    | 2 356    | 2 054    |
| New Brunswick Power             | 2 830    | 2 864    | 2 842    | 2 768    | 2 744    |
| Newfoundland/<br>Labrador Hydro | 2 095    | 2 104    | 2 103    | 1 962    | 1 906    |
| Nova Scotia Power               | 1 475    | 1 413    | 1 428    | 1 395    | 1 242    |

Source: Annual Reports

**TABLE 2****TOTAL REVENUE**

| (Millions of Dollars)           | 1986-87   | 1985/86   | 1984/85   | 1983/84   | 1982/83   |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|
| Ontario Hydro                   | \$4 853.0 | \$4 625.0 | \$4 212.0 | \$3 805.1 | \$3 387.6 |
| Hydro-Quebec                    | 4 734.0   | 4 492.0   | 4 173.0   | 3 659.0   | 3 310.0   |
| British Columbia Hydro          | 1 987.0   | 2 094.0   | 1 953.0   | 1 613.0   | 1 528.5   |
| Transalta Utilities             | 915.5     | 836.0     | 787.3     | 650.6     | 492.5     |
| Saskatchewan Power              | 847.0     | 837.0     | 785.0     | 691.0     | 632.0     |
| New Brunswick Power             | 825.2     | 894.3     | 834.2     | 768.7     | 545.6     |
| Manitoba Hydro                  | 569.7     | 552.6     | 506.4     | 461.5     | 414.7     |
| Nova Scotia Power               | 484.3     | 491.9     | 497.7     | 476.1     | 373.3     |
| Newfoundland/<br>Labrador Power | 320.8     | 330.6     | 279.1     | 242.8     | 232.6     |

Source: Annual Reports

**TABLE 3**  
**NET INCOME**

| (Millions of Dollars)           | 1986-87  | 1985/86  | 1984/85  | 1983/84  | 1982/83  |
|---------------------------------|----------|----------|----------|----------|----------|
| Hydro-Quebec                    | \$ 303.0 | \$ 209.0 | \$ 301.0 | \$ 707.0 | \$ 800.0 |
| Ontario Hydro                   | 247.0    | 360.0    | 575.0    | 471.7    | 348.4    |
| Transalta Utilities             | 53.5     | 180.9    | 183.7    | 148.8    | 134.8    |
| Newfoundland/<br>Labrador Hydro | 36.5     | 29.1     | 50.9     | 16.4     | 20.1     |
| New Brunswick Power             | 29.3     | 23.9     | 18.6     | 1.9      | 21.4     |
| British Columbia Hydro          | 25.0     | 9.0      | (12.0)   | 51.0     | 58.0     |
| Manitoba Hydro<br>(19.1)        | 13.4     | 30.3     | 11.1     | (3.7)    |          |
| Nova Scotia Power<br>(1.5)      | (9.3)    | (12.3)   | 4.7      | 27.9     |          |
| Saskatchewan Power<br>(3.4)     | (10.0)   | 1.0      | 9.6      | (19.7)   |          |

Source: Annual Reports

**TABLE 4**  
**RESERVES**

| (Millions of Dollars)           | 1986-87   | 1985/86   | 1984/85   | 1983/84   | 1982/83   |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|
| Hydro-Quebec                    | \$7 023.0 | \$6 720.0 | \$6 511.0 | \$6 366.0 | \$5 719.0 |
| Ontario Hydro                   | 4 691.0   | 4 444.0   | 4 084.0   | 3 509.0   | 3 037.7   |
| British Columbia Hydro          | 540.0     | 515.0     | 521.0     | 494.0     | 603.0     |
| Transalta Utilities             | 518.7     | 581.5     | 510.7     | 422.1     | 348.4     |
| New Brunswick Power             | 403.7     | 358.3     | 311.8     | 274.4     | 239.4     |
| Newfoundland/<br>Labrador Power | 374.5     | 338.0     | 308.9     | 258.0     | 242.2     |
| Saskatchewan Power              | 213.0     | 223.0     | 222.2     | 212.6     | 232.2     |
| Manitoba Hydro                  | 137.3     | 123.9     | 93.6      | 78.4      | 82.0      |
| Nova Scotia Power               | 59.4      | 68.6      | 80.9      | 58.2      | 30.3      |

Source: Annual Reports



**TABLE 5**  
**NET LONG-TERM DEBT**

| (Millions of Dollars)           | 1986-87  | 1985/86  | 1984/85  | 1983/84  | 1982/83  |
|---------------------------------|----------|----------|----------|----------|----------|
| Ontario Hydro                   | \$23 494 | \$22 518 | \$20 659 | \$17 977 | \$15 882 |
| Hydro-Quebec                    | 20 349   | 20 123   | 18 326   | 16 453   | 15 628   |
| British Columbia Hydro          | 7 472    | 8 209    | 8 387    | 7 203    | 6 833    |
| Manitoba Hydro                  | 2 652    | 2 524    | 2 213    | 2 405    | 2 368    |
| Saskatchewan Power              | 2 162    | 2 072    | 1 885    | 1 772    | 1 416    |
| New Brunswick Power             | 2 088    | 2 163    | 2 128    | 2 123    | 2 224    |
| Nova Scotia Power               | 1 473    | 1 354    | 1 333    | 1 204    | 1 109    |
| Newfoundland/<br>Labrador Power | 1 422    | 1 411    | 1 474    | 1 428    | 1 425    |
| Transalta Utilities             | 992      | 1 094    | 1 025    | 1 028    | 909      |

Source: Annual Reports

**TABLE 6**  
**% FOREIGN**  
**LONG TERM DEBT**

|                                 | 1986-87 | 1985/86 | 1984/85 | 1983/84 | 1982/83 |
|---------------------------------|---------|---------|---------|---------|---------|
| Manitoba Hydro                  | 64%     | 63%     | 60%     | 61%     | 64%     |
| Hydro-Quebec                    | 63      | 63      | 63      | 64      | 65      |
| New Brunswick Power             | 62      | 62      | 65      | 63      | 57      |
| British Columbia Hydro          | 53      | 62      | 61      | 57      | 44      |
| Ontario Hydro                   | 43      | 48      | 50      | 49      | 48      |
| Saskatchewan Power              | 33      | 37      | 39      | 32      | 40      |
| Newfoundland/<br>Labrador Power | 27      | 29      | 28      | 29      | 27      |
| Nova Scotia Power               | 24      | 29      | 27      | 23      | 27      |
| Transalta Utilities             | 6       | 6       | 6       | 8       | 11      |

Source: Annual Reports

**TABLE 7****INTEREST COVERAGE**

|                                 | 1986-87 | 1985/86 | 1984/85 | 1983/84 | 1982/83 |
|---------------------------------|---------|---------|---------|---------|---------|
| Transalta Utilities             | 1.23    | 1.81    | 1.86    | 1.73    | 1.82    |
| Newfoundland/<br>Labrador Hydro | 1.19    | 1.15    | 1.27    | 1.09    | 1.13    |
| Hydro-Quebec                    | 1.12    | 1.09    | 1.14    | 1.36    | 1.43    |
| New Brunswick Power             | 1.11    | 1.08    | 1.07    | 1.01    | 1.09    |
| Ontario Hydro                   | 1.09    | 1.14    | 1.25    | 1.23    | 1.20    |
| British Columbia Hydro          | 1.07    | 1.01    | 0.99    | 1.06    | 1.07    |
| Manitoba Hydro                  | 1.04    | 1.09    | 1.04    | 0.99    | 0.93    |
| Saskatchewan Power              | 0.96    | 1.00    | 1.04    | 0.90    | 0.98    |
| Nova Scotia Power               | 0.95    | 0.93    | 1.04    | 1.19    | 0.98    |

Source: Annual Reports

**TABLE 8****DEBT/EQUITY RATIO**

|                                 | 1986-87 | 1985/86 | 1984/85 | 1983/84 | 1982/83 |
|---------------------------------|---------|---------|---------|---------|---------|
| Transalta Utilities             | 44:56   | 46:54   | 46:54   | 49:51   | 53:47   |
| Hydro-Quebec                    | 74:26   | 75:25   | 74:26   | 72:28   | 73:27   |
| Newfoundland/<br>Labrador Hydro | 79:21   | 81:19   | 83:17   | 85:15   | 85:15   |
| Ontario Hydro                   | 83:17   | 84:16   | 83:17   | 85:15   | 85:15   |
| New Brunswick Power             | 84:16   | 86:14   | 83:17   | 84:16   | 84:16   |
| Saskatchewan Power              | 86:14   | 86:14   | 89:11   | 89:11   | 86:14   |
| British Columbia Hydro          | 93:7    | 94:6    | 94:6    | 92:8    | 92:8    |
| Manitoba Hydro                  | 95:5    | 95:5    | 96:4    | 97:3    | 97:3    |
| Nova Scotia Power               | 96:4    | 95:5    | 94:6    | 95:5    | 97:3    |

Source: Annual Reports

**TABLE 9**  
**INSTALLED GENERATING CAPACITY**

| (in Megawatts)                  | 1986-87 | 1985/86 | 1984/85 | 1983/84 | 1982/83 |
|---------------------------------|---------|---------|---------|---------|---------|
| Ontario Hydro                   | 30 701  | 28 224  | 26 612  | 25 269  | 24 906  |
| Hydro-Quebec                    | 24 475  | 23 510  | 23 480  | 21 301  | 19 142  |
| British Columbia Hydro          | 10 481  | 10 483  | 10 503  | 8 760   | 8 832   |
| Newfoundland/<br>Labrador Hydro | 7 157   | 7 156   | 6 851   | 6 851   | 6 768   |
| Transalta Utilities             | 4 293   | 4 110   | 4 110   | 3 733   | 3 356   |
| Manitoba Hydro                  | 4 089   | 4 091   | 4 091   | 4 091   | 4 091   |
| New Brunswick Power             | 3 190   | 3 190   | 3 190   | 3 137   | 3 137   |
| Saskatchewan Power              | 2 735   | 2 560   | 2 469   | 2 439   | 2 253   |
| Nova Scotia Power               | 1 814   | 1 999   | 2 230   | 2 048   | 1 894   |

Source: Annual Reports

**TABLE 10**  
**FIRM PEAK DEMAND**

| (in Megawatts)                  | 1986-87 | 1985/86 | 1984/85 | 1983/84 | 1982/83 |
|---------------------------------|---------|---------|---------|---------|---------|
| Hydro-Quebec                    | 23 219  | 22 946  | 21 760  | 19 788  | 18 379  |
| Ontario Hydro                   | 20 609  | 20 473  | 18 052  | 18 792  | 16 872  |
| British Columbia Hydro          | 6 345   | 6 816   | 6 193   | 6 215   | 5 508   |
| Transalta Utilities             | 3 103   | 3 126   | 3 000   | 2 812   | 2 542   |
| Manitoba Hydro                  | 3 011   | 2 941   | 2 952   | 2 889   | 2 543   |
| New Brunswick Power             | 2 110   | 2 001   | 1 834   | 1 702   | 1 438   |
| Saskatchewan Power              | 2 077   | 2 100   | 2 095   | 2 010   | 1 829   |
| Nova Scotia                     | 1 361   | 1 355   | 1 265   | 1 257   | 1 115   |
| Newfoundland/<br>Labrador Hydro | 1 084   | 1 009   | 1 013   | 1 040   | 881     |

Source: Annual Reports

**TABLE 11**  
**ENERGY GENERATED AND PURCHASED**

| (millions of KW.hrs)            | 1986-87 | 1985/86 | 1984/85 | 1983/84 | 1982/83 |
|---------------------------------|---------|---------|---------|---------|---------|
| Hydro-Quebec                    | 160 910 | 150 017 | 138 886 | 122 958 | 117 903 |
| Ontario Hydro                   | 126 620 | 124 614 | 122 900 | 118 000 | 111 600 |
| British Columbia Hydro          | 42 635  | 46 660  | 42 215  | 35 570  | 35 431  |
| Newfoundland/<br>Labrador Hydro | 38 874  | 39 951  | 43 753  | 38 306  | 42 497  |
| Manitoba Hydro                  | 24 180  | 23 421  | 21 408  | 22 080  | 21 810  |
| Transalta Utilities             | 20 300  | 19 956  | 18 711  | 17 143  | 16 197  |
| New Brunswick Power             | 18 904  | 18 238  | 16 767  | 16 299  | 12 162  |
| Saskatchewan Power              | 11 607  | 11 768  | 11 405  | 10 413  | 9 755   |
| Nova Scotia Power               | 8 136   | 8 118   | 7 862   | 7 331   | 6 917   |

Source: Annual Reports

**TABLE 12**  
**TOTAL NUMBER OF CUSTOMERS**

|                                 | 1986-87   | 1985/86   | 1984/85   | 1983/84   | 1982/83   |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|
| Ontario Hydro                   | 3 241 000 | 3 173 000 | 3 105 000 | 3 051 000 | 3 004 000 |
| Hydro-Quebec                    | 2 862 422 | 2 783 590 | 2 696 601 | 2 644 271 | 2 564 944 |
| British Columbia Hydro          | 1 184 266 | 1 162 965 | 1 141 905 | 1 123 733 | 1 102 442 |
| Transalta Utilities             | 584 432   | 575 792   | 571 488   | 568 000   | 546 723   |
| Saskatchewan Power              | 402 000   | 390 460   | 385 867   | 380 451   | 370 406   |
| Nova Scotia Power               | 364 673   | 356 764   | 348 146   | 341 006   | 334 205   |
| Manitoba Hydro                  | 354 814   | 346 719   | 340 158   | 333 587   | 327 842   |
| New Brunswick Power             | 290 922   | 284 278   | 278 438   | 273 521   | 267 885   |
| Newfoundland/<br>Labrador Hydro | 175 631   | 173 902   | 169 071   | 165 458   | 161 662   |

Source: Annual Reports

TABLE 13PROVINCIAL CREDIT RATINGS

|                  | 1988 | 1987 | 1986 | 1985 | 1984 | 1983 | 1982 | 1981 |
|------------------|------|------|------|------|------|------|------|------|
| Alberta          | AAA  | AAA  | AAA  | AAA  | AAA  | AAA  | AAA  | AAA  |
| Ontario          | AAA  | AA+  | AA+  | AAA  | AAA  | AAA  | AAA  | AAA  |
| British Columbia | AA   | AA   | AA   | AA+  | AA+  | AA+  | AAA  | AAA  |
| Saskatchewan     | AA   | AA   | AA   | AA+  | AA+  | AA+  | AA+  | AA   |
| Quebec           | AAA  | AA-  | AA-  | AA-  | AA-  | AA-  | AA-  | AA   |
| Manitoba         | A+   | A+   | AA-  | AA-  | AA-  | AA-  | AA   | AA   |
| New Brunswick    | A+   | A+   | A+   | A+   | A+   | A+   | A+   | A+   |
| Nova Scotia      | A-   | A-   | A-   | A    | A    | A    | A    | A    |

\* Represents the rating of the province or a provincially guaranteed corporation.

Standard and Poor's Rating Guide

AAA - prime quality  
 AA - high grade  
 A - good grade  
 BBB - medium grade  
 BB - lower medium grade  
 B - low grade

Note: According to rating agency, a half notched drop in rating could cost a borrower 20 basis points or 1/5 of a percentage (1% = 100 basis points).

**APPENDIX C**



ELECTRICITY BILL COMPARISON

SEPTEMBER 1987

MS & DD 87-23

Prepared by:

Bireta Bireta  
B.M. Bireta

J.I. Campbell  
J.I. Campbell

K.M. Nakanishi  
K.M. Nakanishi

Reviewed:

F.W. Bussey  
F.W. Bussey  
Superintendent - Energy  
Energy Analysis Section

Approved:

L.D. Wilson  
L.D. Wilson  
Manager  
Market Planning Department

Enquiries  
Energy Analysis Section  
Market Planning Department  
Market Services and Development Division  
700 University Avenue C25-B1  
Toronto, Ontario  
Canada  
M5G 1X6

## INTRODUCTION

This report replaces the Canada and USA monthly bills comparison and the International Comparison of Electricity Rates reports.

Charts are shown for:

a) Residential electricity consumption of:

- . 625 KWh/month and
- . 1,000 KWh/month.

625 KWh/month reflects the midpoint between the average consumption in Europe and the average consumption in Canada.

1,000 KWh/month is close to an average of Ontario customers consumption.

b) Industrial electricity consumption of:

- . 1,000 KW demand, 400,000 KWh and
- . 10,000 KW demand, 5,840,000 KWh at 80% load factor.

These two categories reflect medium and large industrial customers.

Bills are on a monthly basis and are shown in Canadian dollars.

### HIGHLIGHTS

Canadian electricity bills continued to be the least expensive of all major countries.

Bills for four Canadian utilities increased, three had no change and three declined.

Winnipeg, which has the lowest electricity bill at all consumption levels, had the largest increase in its bills of approximately 10%. Half of the increase was due to inflation and added operating costs. The other half was due to the removal of the rate stabilization from the provincial government. Charlottetown, with the most expensive Canadian electricity bill, had the largest decrease (12%) due to the declining cost of oil.

American bills decreased but still remained higher than Canadian bills. The decrease was caused by lower fuel prices such as oil and the strengthening of the Canadian dollar.

### FINDINGS

#### Residential Bills

Eight of the smallest 10 bills at 625 KWH and 9 of the smallest 10 bills at 1000 KWH are Canadian.

Portland, Oregon and TVA have the lowest foreign bills while Sweden has the lowest non-North American bill.

#### Industrial Bills

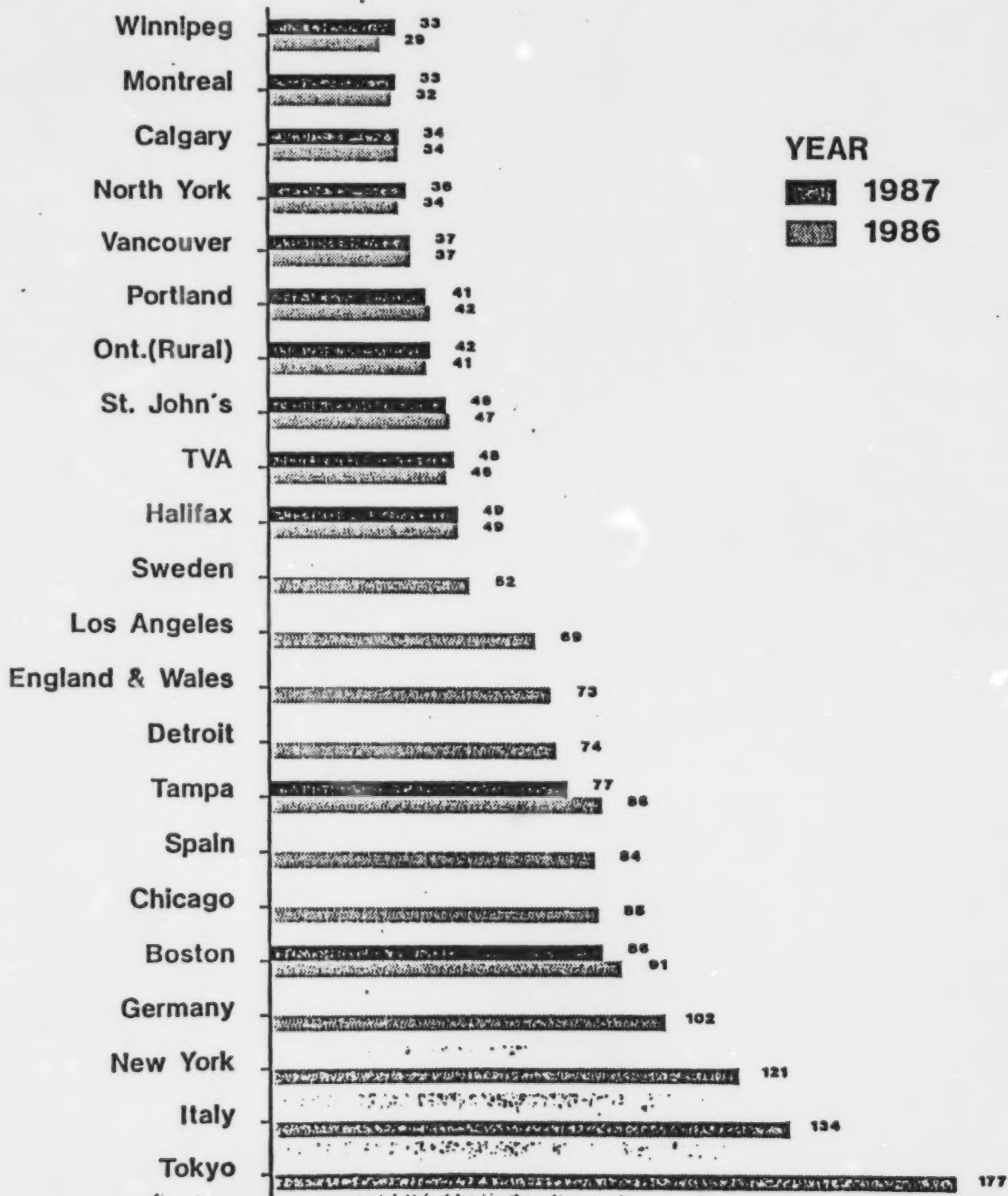
Seven of the 8 lowest bills at 10,000 KW and the lowest 11 bills at 1000 KW are Canadian.

For the lower industrial consumption level, Dallas has the lowest American bill.

For the higher industrial consumption level, Sweden has the lowest foreign bill while Portland has the lowest American bill.

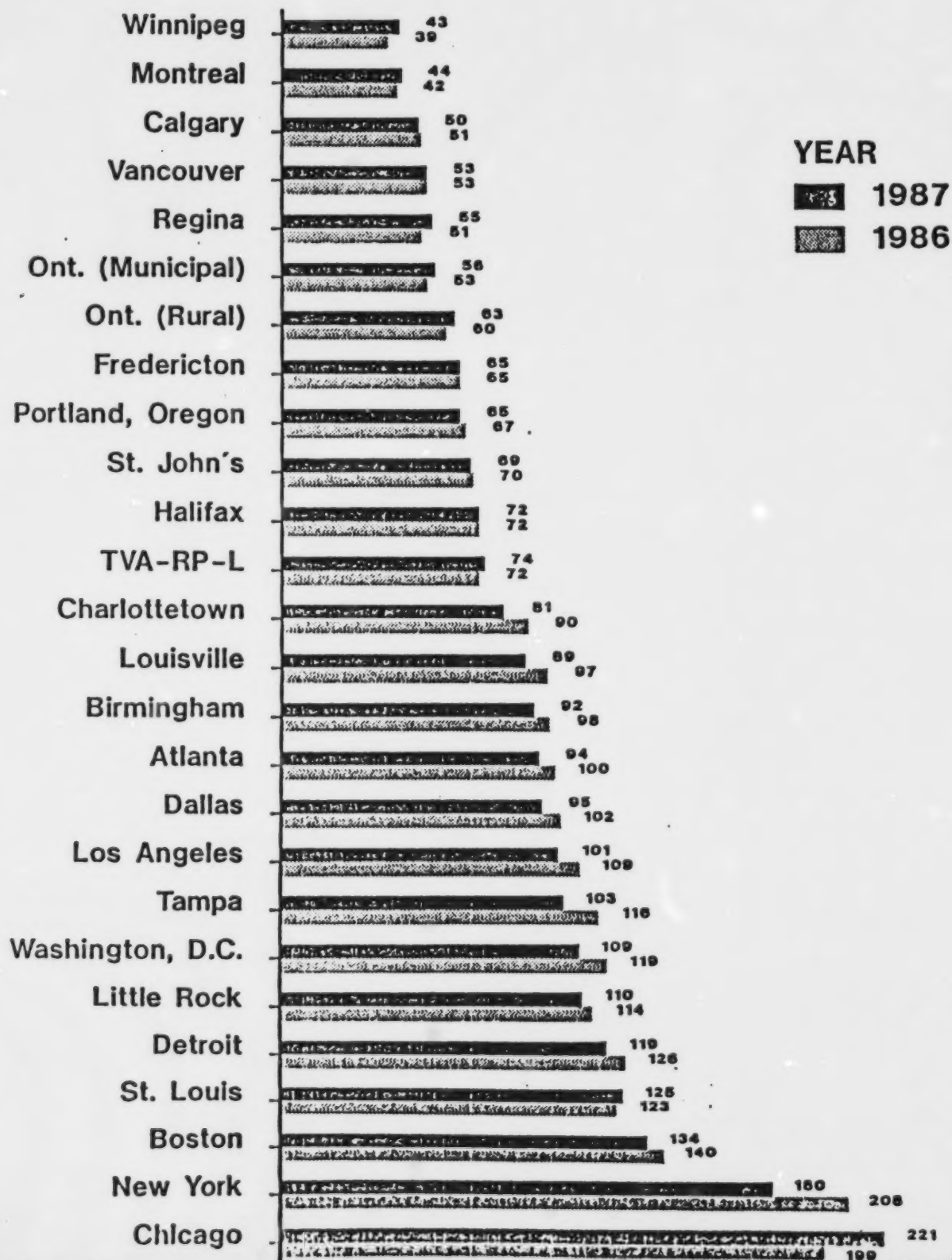
# MONTHLY RESIDENTIAL ELECTRIC BILLS 625 KILOWATT HOURS

CDN \$



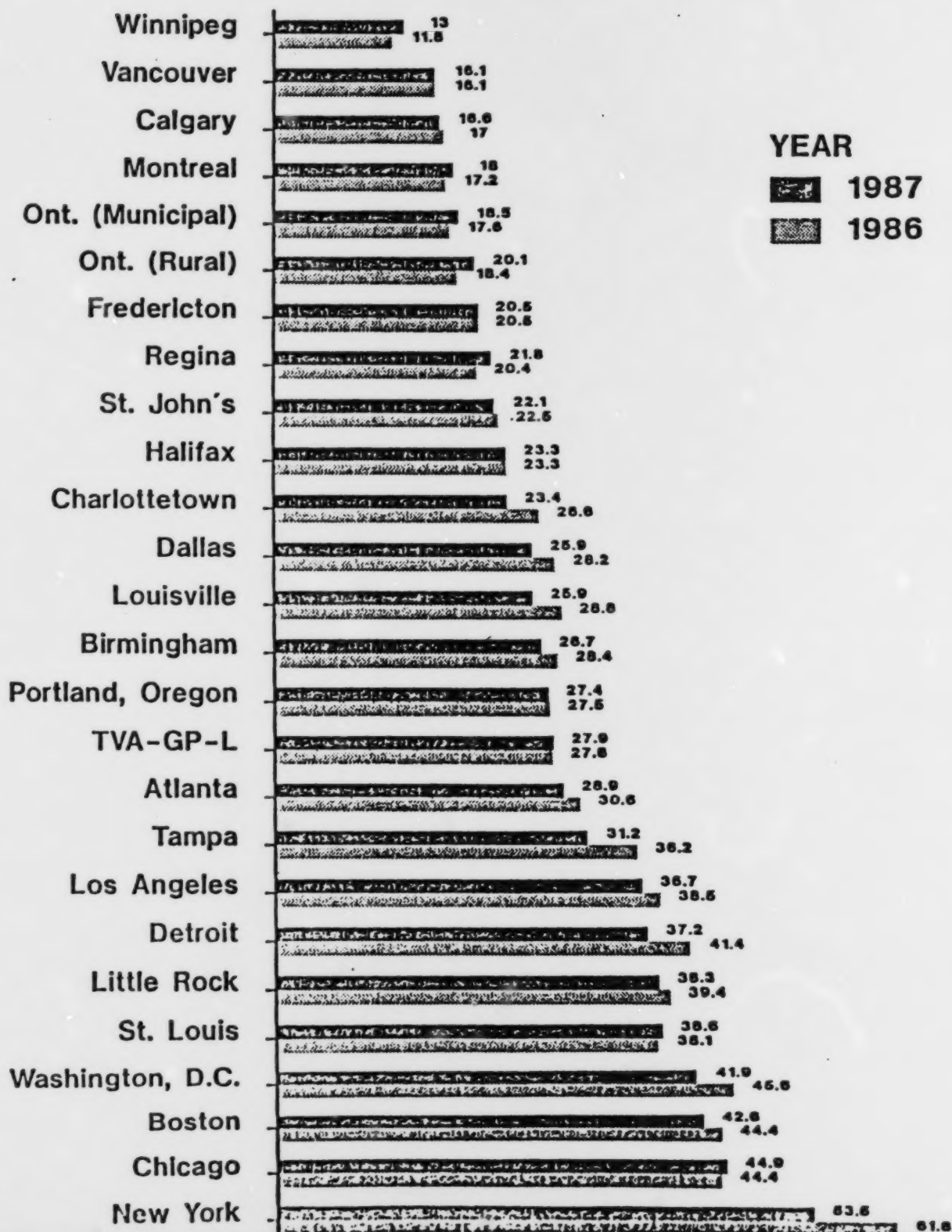
# MONTHLY RESIDENTIAL ELECTRIC BILLS 1,000 KILOWATT HOURS

CDN \$



# MONTHLY INDUSTRIAL ELECTRIC BILLS 1,000 KW DEMAND 400,000 KWH

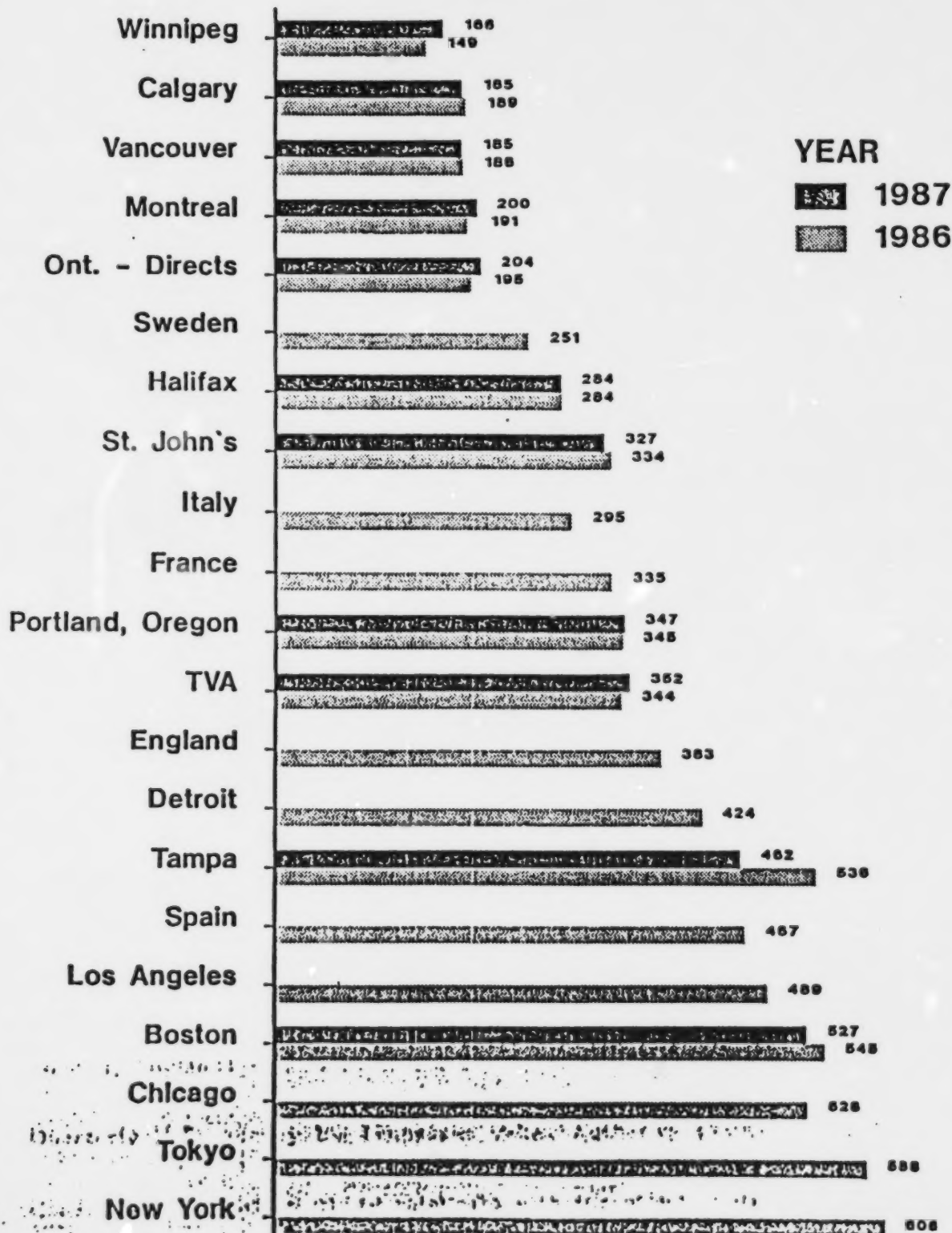
CDN \$000's





# MONTHLY INDUSTRIAL ELECTRIC BIL 10,000 KW DEMAND 5,840,000 KWH

CDN \$000's



NOTESExchange Rates

Currency exchange rates used for residential bills of 625 KWh and industrial bills of 10,000 KW, 5,840,000 KWh are:

Canadian Dollar  
October 1, 1986

|                     |          |
|---------------------|----------|
| U.S. - Dollar       | 1.386    |
| Japan - Yen         | 0.009021 |
| Italy - Lira        | 0.000995 |
| Spain - Peseta      | 0.010452 |
| England - Pound     | 2.01     |
| France - Franc      | 0.21003  |
| Sweden - Krona      | 0.20160  |
| West Germany - Mark | 0.68835  |

Canadian Dollar  
July 1, 1987

|               |       |
|---------------|-------|
| U.S. - Dollar | 1.347 |
|---------------|-------|

The Canadian to U.S. currency exchange rates used for residential bills of 1000 KWH and industrial bills of 1000 KW demand and 400,000 KWh are:

|              |        |
|--------------|--------|
| July 1, 1986 | 1.4030 |
| July 1, 1987 | 1.347  |

Load Factor

Industrial demand rates for some utilities are quoted in \$/KVA and for other utilities in \$/KW. The power factor allowance varies from 90% to 95%. Ontario Hydro's power factor allowance is 90%.

Sales Taxes, etc.

Sales Tax, special local charges and fuel costs escalators are included in the two charts with European and Asian utilities. On the other two charts, only fuel cost escalators are added to the basic rates.

DATA SOURCES

1. International Comparison of Electricity Prices - 1986 (Electricity Council, London, England) - rates as of October 1, 1986
2. Quarterly U.S. survey by Tennessee Valley Authority (TVA) - July 1, 1986 and July 1, 1987.
3. Canadian and American utility ratebooks with the effective date of July 1, 1987.

APPENDIX D

**LIFETIME\***  
**WORLD NUCLEAR POWER REACTOR PERFORMANCE**  
 Units 500 MWe and over which produced  
 electricity prior to January 1, 1987

| Country         | Unit             | Nominal<br>Gross<br>Capacity<br>(MWe) | Years in<br>service | Lifetime*<br>Gross Capacity Factor |    |    |    |    |     |      |
|-----------------|------------------|---------------------------------------|---------------------|------------------------------------|----|----|----|----|-----|------|
|                 |                  |                                       |                     | 0                                  | 20 | 40 | 60 | 80 | 100 |      |
| 1. Canada       | Pt. Lepreau      | 680                                   | 4                   |                                    |    |    |    |    |     | 87.5 |
| 2. Canada       | Pickering-7      | 540                                   | 3                   |                                    |    |    |    |    |     | 87.3 |
| 3. Canada       | Bruce-3          | 904                                   | 9                   |                                    |    |    |    |    |     | 86.9 |
| 4. Canada       | Pickering-8      | 540                                   | 1                   |                                    |    |    |    |    |     | 86.8 |
| 5. Canada       | Bruce-6          | 890                                   | 3                   |                                    |    |    |    |    |     | 86.2 |
| 6. Canada       | Bruce-7          | 890                                   | 1                   |                                    |    |    |    |    |     | 85.6 |
| 7. W. Germany   | Philippsburg-2   | 1 350                                 | 2                   |                                    |    |    |    |    |     | 85.4 |
| 8. W. Germany   | Gronhde A-1      | 1 365                                 | 2                   |                                    |    |    |    |    |     | 85.1 |
| 9. Canada       | Bruce-4          | 904                                   | 8                   |                                    |    |    |    |    |     | 84.7 |
| 10. Belgium     | Tihange-3        | 1 048                                 | 2                   |                                    |    |    |    |    |     | 84.1 |
| 11. W. Germany  | Stade-1          | 672                                   | 15                  |                                    |    |    |    |    |     | 84.0 |
| 12. Canada      | Bruce-5          | 885                                   | 2                   |                                    |    |    |    |    |     | 84.0 |
| 13. W. Germany  | Grafenrheinfeld  | 1 290                                 | 6                   |                                    |    |    |    |    |     | 83.5 |
| 14. Japan       | Genka-2          | 559                                   | 5                   |                                    |    |    |    |    |     | 82.9 |
| 15. Belgium     | Doel-3           | 936                                   | 5                   |                                    |    |    |    |    |     | 82.7 |
| 16. Canada      | Pickering-4      | 542                                   | 14                  |                                    |    |    |    |    |     | 82.1 |
| 17. W. Germany  | Krummel          | 1 316                                 | 3                   |                                    |    |    |    |    |     | 82.0 |
| 18. USA         | St. Lucie-2      | 882                                   | 4                   |                                    |    |    |    |    |     | 82.0 |
| 19. USA         | Hope Creek-1     | 1 118                                 | 0                   |                                    |    |    |    |    |     | 81.0 |
| 20. Japan       | Ihata-2          | 566                                   | 5                   |                                    |    |    |    |    |     | 80.9 |
| 21. Canada      | Bruce-1          | 904                                   | 10                  |                                    |    |    |    |    |     | 80.4 |
| 22. Switzerland | Gosgen           | 970                                   | 8                   |                                    |    |    |    |    |     | 79.6 |
| 23. Canada      | Pickering-5      | 540                                   | 4                   |                                    |    |    |    |    |     | 79.6 |
| 24. Finland     | Olkiluoto-1      | 735                                   | 8                   |                                    |    |    |    |    |     | 79.6 |
| 25. Belgium     | Doel-4           | 1 049                                 | 2                   |                                    |    |    |    |    |     | 79.4 |
| 26. Sweden      | Oskarshamn-2     | 615                                   | 13                  |                                    |    |    |    |    |     | 79.3 |
| 27. Canada      | Pickering-6      | 540                                   | 3                   |                                    |    |    |    |    |     | 79.3 |
| 28. Sweden      | Barseback-2      | 600                                   | 10                  |                                    |    |    |    |    |     | 79.3 |
| 29. W. Germany  | Brokdorf         | 1 383                                 | 1                   |                                    |    |    |    |    |     | 79.1 |
| 30. W. Germany  | Unterweser       | 1 300                                 | 8                   |                                    |    |    |    |    |     | 79.0 |
| 31. USA         | Prairie Island-2 | 560                                   | 13                  |                                    |    |    |    |    |     | 78.9 |
| 32. USA         | Point Beach-2    | 524                                   | 15                  |                                    |    |    |    |    |     | 78.8 |
| 33. USA         | Farley-2         | 872                                   | 6                   |                                    |    |    |    |    |     | 78.8 |
| 34. Japan       | K-Karwa-1*       | 1 100                                 | 2                   |                                    |    |    |    |    |     | 78.7 |
| 35. W. Germany  | Gundrem B**      | 1 310                                 | 3                   |                                    |    |    |    |    |     | 77.7 |
| 36. Belgium     | Tihange-2        | 941                                   | 4                   |                                    |    |    |    |    |     | 77.6 |
| 37. Japan       | Sendai-1         | 890                                   | 3                   |                                    |    |    |    |    |     | 77.5 |
| 38. S. Korea    | Wolsung          | 679                                   | 4                   |                                    |    |    |    |    |     | 77.4 |
| 39. USA         | Kewaunee-1       | 563                                   | 13                  |                                    |    |    |    |    |     | 77.4 |
| 40. Canada      | Pickering-3      | 542                                   | 15                  |                                    |    |    |    |    |     | 77.4 |

| Country        | Unit             | Nominal<br>Gross<br>Capacity<br>(MWe) | Years in<br>service | Lifetime*<br>Gross Capacity Factor |    |    |    |    |     |      |
|----------------|------------------|---------------------------------------|---------------------|------------------------------------|----|----|----|----|-----|------|
|                |                  |                                       |                     | 0                                  | 20 | 40 | 60 | 80 | 100 |      |
| 41. USA        | Calvert Cliffs-2 | 880                                   | 10                  |                                    |    |    |    |    |     | 76.8 |
| 42. Japan      | Takahama-3       | 870                                   | 2                   |                                    |    |    |    |    |     | 76.8 |
| 43. Finland    | Olkiluoto-2      | 735                                   | 7                   |                                    |    |    |    |    |     | 76.6 |
| 44. Spain      | Almaraz-2        | 930                                   | 3                   |                                    |    |    |    |    |     | 76.2 |
| 45. Spain      | Codreñas         | 975                                   | 2                   |                                    |    |    |    |    |     | 75.9 |
| 46. USA        | Prairie Island-1 | 560                                   | 14                  |                                    |    |    |    |    |     | 75.9 |
| 47. France     | Tricastin-3      | 957                                   | 6                   |                                    |    |    |    |    |     | 75.7 |
| 48. Japan      | Onagawa          | 524                                   | 3                   |                                    |    |    |    |    |     | 75.2 |
| 49. W. Germany | Gundrem C**      | 1 310                                 | 2                   |                                    |    |    |    |    |     | 75.0 |
| 50. France     | Blayais-4        | 957                                   | 4                   |                                    |    |    |    |    |     | 74.9 |
| 51. Belgium    | Tihange-1        | 920                                   | 9                   |                                    |    |    |    |    |     | 74.7 |
| 52. Japan      | Ihata-1          | 566                                   | 10                  |                                    |    |    |    |    |     | 74.5 |
| 53. Taiwan     | Chinsuan-2       | 636                                   | 8                   |                                    |    |    |    |    |     | 74.4 |
| 54. Japan      | Fukushima II-1   | 1 100                                 | 5                   |                                    |    |    |    |    |     | 74.3 |
| 55. Japan      | Takahama-4       | 870                                   | 2                   |                                    |    |    |    |    |     | 74.1 |
| 56. Japan      | Fukushima II-2   | 1 100                                 | 3                   |                                    |    |    |    |    |     | 73.9 |
| 57. Sweden     | Barseback-1      | 615                                   | 12                  |                                    |    |    |    |    |     | 73.9 |
| 58. France     | Paluel-4         | 1 345                                 | 1                   |                                    |    |    |    |    |     | 73.8 |
| 59. USA        | Corn. Yankee*    | 616                                   | 20                  |                                    |    |    |    |    |     | 73.8 |
| 60. Japan      | Fukushima II-3   | 1 100                                 | 2                   |                                    |    |    |    |    |     | 73.7 |
| 61. France     | Blayais-2        | 957                                   | 4                   |                                    |    |    |    |    |     | 73.7 |
| 62. S. Korea   | Kori-2           | 650                                   | 4                   |                                    |    |    |    |    |     | 73.6 |
| 63. Sweden     | Oskarshamn-3     | 1 110                                 | 2                   |                                    |    |    |    |    |     | 73.2 |
| 64. Sweden     | Forssmark-3      | 1 101                                 | 2                   |                                    |    |    |    |    |     | 73.1 |
| 65. Japan      | Sendai-2         | 890                                   | 2                   |                                    |    |    |    |    |     | 72.9 |
| 66. France     | Blayais-3        | 957                                   | 4                   |                                    |    |    |    |    |     | 72.6 |
| 67. Sweden     | Forssmark-1      | 1 006                                 | 7                   |                                    |    |    |    |    |     | 72.4 |
| 68. W. Germany | Neckar           | 855                                   | 11                  |                                    |    |    |    |    |     | 72.4 |
| 69. France     | Dampierre-4      | 942                                   | 6                   |                                    |    |    |    |    |     | 72.2 |
| 70. Canada     | Bruce-2          | 904                                   | 10                  |                                    |    |    |    |    |     | 71.9 |
| 71. France     | Dampierre-3      | 942                                   | 6                   |                                    |    |    |    |    |     | 71.9 |
| 72. USA        | Callaway         | 1 192                                 | 3                   |                                    |    |    |    |    |     | 71.8 |
| 73. France     | Chinnon-82       | 924                                   | 3                   |                                    |    |    |    |    |     | 71.3 |
| 74. Japan      | Hamaoka-2        | 840                                   | 9                   |                                    |    |    |    |    |     | 71.1 |
| 75. France     | Tricastin-4      | 957                                   | 7                   |                                    |    |    |    |    |     | 70.9 |
| 76. France     | Tricastin-2      | 957                                   | 7                   |                                    |    |    |    |    |     | 70.9 |
| 77. USA        | Point Beach-1    | 524                                   | 17                  |                                    |    |    |    |    |     | 70.5 |
| 78. France     | Fessenheim-2     | 930                                   | 9                   |                                    |    |    |    |    |     | 70.4 |
| 79. France     | Crus-4           | 929                                   | 2                   |                                    |    |    |    |    |     | 70.3 |
| 80. Japan      | Genka-1          | 559                                   | 12                  |                                    |    |    |    |    |     | 70.1 |

\*Kashiwazaki-Karwa

\*\*Gundremmingen

■ BWR

□ PWR

□ CANDU-PHW

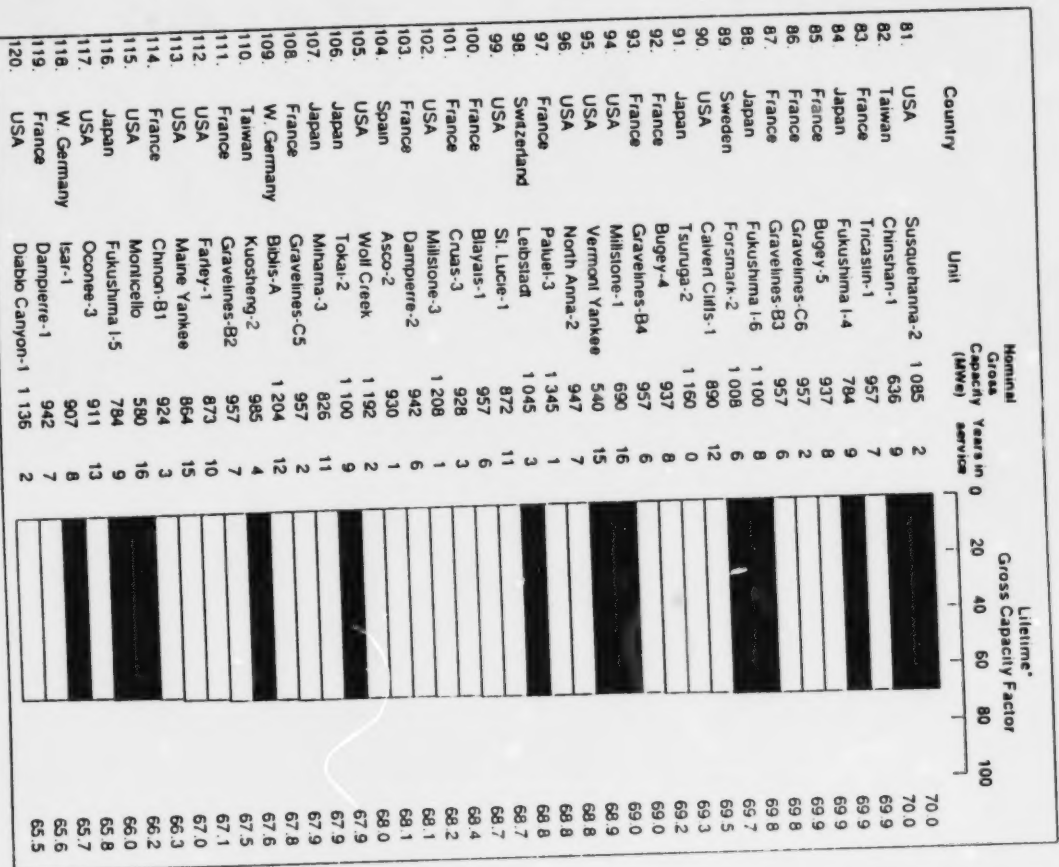
□ GCR

\*\*Gundremmingen

\*Connecticut Yankee

\* From first electricity to Dec. 31, 1987

**LIFETIME\***  
**WORLD NUCLEAR POWER REACTOR PERFORMANCE**  
 Units 500 MWe and over which produced  
 electricity prior to January 1, 1987

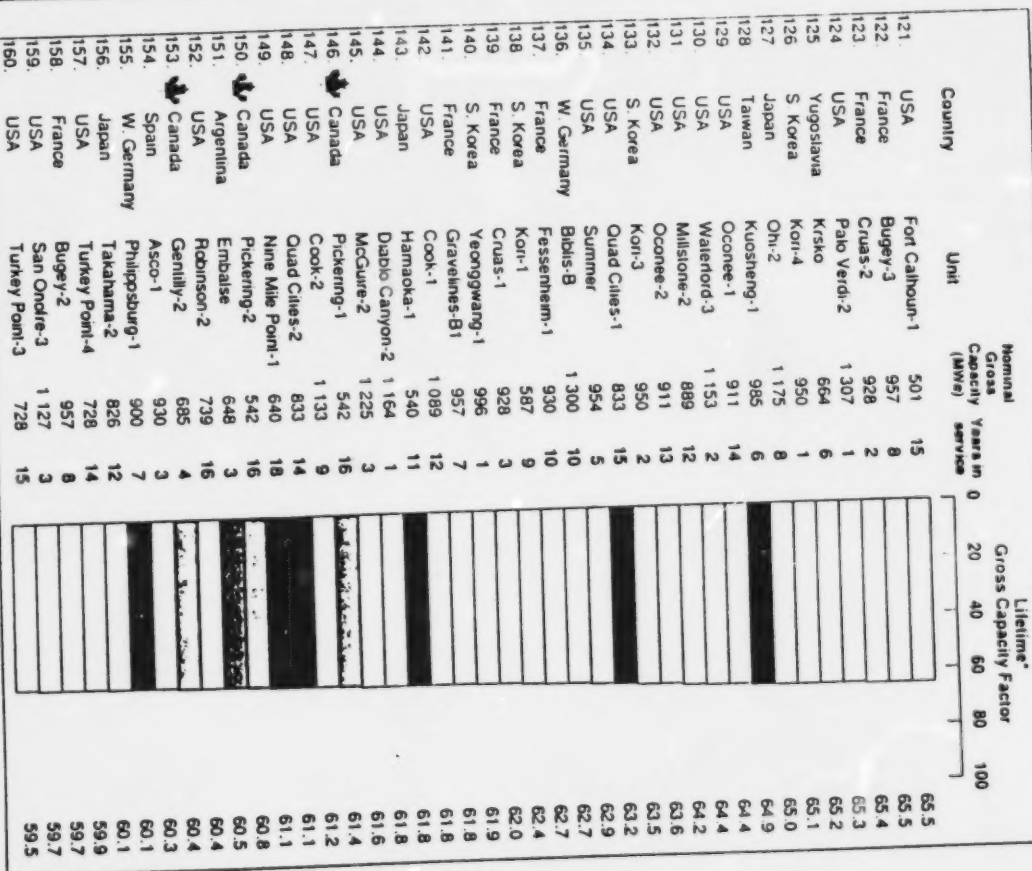


BWR

PWR

CANDU-PHW

GCR





# **LIFETIME\*** **WORLD NUCLEAR POWER REACTOR PERFORMANCE** Units 500 MWe and over which produced electricity prior to January 1, 1987

| Rank | Country    | Unit             | Nominal<br>Gross<br>Capacity<br>(MWe) | Years in<br>service | Lifetime*<br>Gross Capacity Factor |    |    |    |    | Efficiency<br>(%) |
|------|------------|------------------|---------------------------------------|---------------------|------------------------------------|----|----|----|----|-------------------|
|      |            |                  |                                       |                     | 0                                  | 20 | 40 | 60 | 80 |                   |
| 161. | USA        | Fitzpatrick      | 850                                   | 12                  |                                    |    |    |    |    | 59.5              |
| 162. | France     | Callenon-1       | 1 345                                 | 0                   |                                    |    |    |    |    | 59.4              |
| 163. | France     | Paluel-2         | 1 345                                 | 2                   |                                    |    |    |    |    | 59.2              |
| 164. | USA        | North Anna-1     | 947                                   | 9                   |                                    |    |    |    |    | 59.2              |
| 165. | Taiwan     | Maanshan-2       | 952                                   | 2                   |                                    |    |    |    |    | 59.1              |
| 166. | USA        | Susquehanna-1    | 1 085                                 | 4                   |                                    |    |    |    |    | 58.8              |
| 167. | USA        | Cooper           | 801                                   | 13                  |                                    |    |    |    |    | 58.7              |
| 168. | Japan      | Fukushima II-4   | 1 100                                 | 0                   |                                    |    |    |    |    | 58.6              |
| 169. | Japan      | Fukushima I-3    | 784                                   | 11                  |                                    |    |    |    |    | 58.6              |
| 170. | USA        | Zion-2           | 1 085                                 | 13                  |                                    |    |    |    |    | 58.1              |
| 171. | Spain      | Almaraz-1        | 930                                   | 6                   |                                    |    |    |    |    | 58.1              |
| 172. | USA        | Surry-2          | 824                                   | 14                  |                                    |    |    |    |    | 58.1              |
| 173. | France     | Bugey-1          | 560                                   | 15                  |                                    |    |    |    |    | 58.0              |
| 174. | Japan      | Mihama-2         | 500                                   | 15                  |                                    |    |    |    |    | 57.9              |
| 175. | Sweden     | Ringhals-1       | 790                                   | 12                  |                                    |    |    |    |    | 57.7              |
| 176. | USA        | Hatch-2          | 817                                   | 8                   |                                    |    |    |    |    | 57.6              |
| 177. | Sweden     | Ringhals-4       | 990                                   | 4                   |                                    |    |    |    |    | 57.2              |
| 178. | USA        | Zion-1           | 1 085                                 | 13                  |                                    |    |    |    |    | 57.1              |
| 179. | USA        | Byron-1          | 1 175                                 | 2                   |                                    |    |    |    |    | 57.0              |
| 180. | USA        | Arkansas I-2     | 943                                   | 7                   |                                    |    |    |    |    | 56.8              |
| 181. | USA        | Arkansas I-1     | 903                                   | 13                  |                                    |    |    |    |    | 56.6              |
| 182. | USA        | Dresden-2        | 834                                   | 14                  |                                    |    |    |    |    | 56.3              |
| 183. | USA        | Hatch-1          | 809                                   | 12                  |                                    |    |    |    |    | 56.1              |
| 184. | USA        | Calamba-2        | 1 205                                 | 1                   |                                    |    |    |    |    | 56.1              |
| 185. | Sweden     | Ringhals-2       | 840                                   | 12                  |                                    |    |    |    |    | 55.8              |
| 186. | USA        | Peach Bottom-3   | 1 098                                 | 13                  |                                    |    |    |    |    | 55.7              |
| 187. | France     | Flamanville-2    | 1 345                                 | 0                   |                                    |    |    |    |    | 55.6              |
| 188. | Japan      | Oh-1             | 1 175                                 | 8                   |                                    |    |    |    |    | 55.3              |
| 189. | USA        | Crystal River-3  | 868                                   | 10                  |                                    |    |    |    |    | 55.2              |
| 190. | USA        | Calamba-1        | 1 205                                 | 2                   |                                    |    |    |    |    | 54.7              |
| 191. | USA        | Surry-1          | 824                                   | 15                  |                                    |    |    |    |    | 54.6              |
| 192. | USA        | McGuire-1        | 1 225                                 | 6                   |                                    |    |    |    |    | 54.6              |
| 193. | France     | St. Laurent-B2   | 928                                   | 6                   |                                    |    |    |    |    | 54.6              |
| 194. | USA        | Dresden-3        | 832                                   | 14                  |                                    |    |    |    |    | 54.2              |
| 195. | France     | St. Alban-1      | 1 348                                 | 1                   |                                    |    |    |    |    | 54.2              |
| 196. | USA        | San Onofre-2     | 1 127                                 | 4                   |                                    |    |    |    |    | 53.7              |
| 197. | France     | Flamanville-1    | 1 345                                 | 1                   |                                    |    |    |    |    | 53.7              |
| 198. | USA        | Peach Bottom-2   | 1 098                                 | 13                  |                                    |    |    |    |    | 53.6              |
| 199. | Japan      | Takahama-1       | 826                                   | 13                  |                                    |    |    |    |    | 53.2              |
| 200. | USA        | Limerick-1       | 1 140                                 | 1                   |                                    |    |    |    |    | 52.8              |
| 201. | Britain    | Hinkley Point-B1 | 660                                   | 9                   |                                    |    |    |    |    | 52.7              |
| 202. | Britain    | Hunterston-B1    | 660                                   | 11                  |                                    |    |    |    |    | 52.6              |
| 203. | France     | Chinn-B3         | 924                                   | 0                   |                                    |    |    |    |    | 52.5              |
| 204. | Sweden     | Ringhals-3       | 980                                   | 6                   |                                    |    |    |    |    | 52.3              |
| 205. | USA        | Duane Arnold     | 566                                   | 12                  |                                    |    |    |    |    | 52.2              |
| 206. | Japan      | Fukushima I-2    | 784                                   | 13                  |                                    |    |    |    |    | 52.1              |
| 207. | USA        | Salem-1          | 1 136                                 | 10                  |                                    |    |    |    |    | 52.1              |
| 208. | S. Africa  | Koeberg-2        | 965                                   | 2                   |                                    |    |    |    |    | 52.1              |
| 209. | Britain    | Hunterston-B2    | 660                                   | 10                  |                                    |    |    |    |    | 52.0              |
| 210. | France     | St. Laurent-A2   | 530                                   | 16                  |                                    |    |    |    |    | 51.6              |
| 211. | USA        | Oyster Creek     | 650                                   | 18                  |                                    |    |    |    |    | 51.3              |
| 212. | W. Germany | Brunsbüttel      | 806                                   | 10                  |                                    |    |    |    |    | 50.9              |
| 213. | France     | St. Laurent-A1   | 500                                   | 18                  |                                    |    |    |    |    | 50.9              |
| 214. | Britain    | Hinkley Point-B2 | 660                                   | 11                  |                                    |    |    |    |    | 50.7              |
| 215. | France     | Paluel-1         | 1 345                                 | 2                   |                                    |    |    |    |    | 50.4              |
| 216. | USA        | Indian Point-2   | 1 022                                 | 14                  |                                    |    |    |    |    | 50.3              |
| 217. | USA        | WNP-2            | 1 155                                 | 3                   |                                    |    |    |    |    | 50.0              |
| 218. | W. Germany | Würgassen        | 670                                   | 12                  |                                    |    |    |    |    | 49.9              |
| 219. | USA        | Brunswick-1      | 849                                   | 10                  |                                    |    |    |    |    | 49.6              |
| 220. | USA        | Pilgrim-1        | 685                                   | 15                  |                                    |    |    |    |    | 48.9              |
| 221. | USA        | La Salle-2       | 1 122                                 | 3                   |                                    |    |    |    |    | 48.6              |
| 222. | France     | St. Alban-2      | 1 348                                 | 0                   |                                    |    |    |    |    | 48.5              |
| 223. | S. Africa  | Koeberg-1        | 965                                   | 3                   |                                    |    |    |    |    | 48.3              |
| 224. | France     | St. Laurent-B1   | 928                                   | 6                   |                                    |    |    |    |    | 47.9              |
| 225. | Britain    | Wylfa-1          | 1 352                                 | 16                  |                                    |    |    |    |    | 47.9              |
| 226. | USA        | River Bend-1     | 991                                   | 1                   |                                    |    |    |    |    | 47.8              |
| 227. | USA        | Indian Point-3   | 1 013                                 | 11                  |                                    |    |    |    |    | 47.8              |
| 228. | USA        | Beaver Valley-1  | 888                                   | 11                  |                                    |    |    |    |    | 47.5              |
| 229. | USA        | Salem-2          | 1 158                                 | 6                   |                                    |    |    |    |    | 47.4              |
| 230. | USA        | Grand Gulf-1     | 1 306                                 | 2                   |                                    |    |    |    |    | 47.3              |
| 231. | S. Korea   | Yeonggwang-2     | 996                                   | 0                   |                                    |    |    |    |    | 47.2              |
| 232. | USA        | Trojan           | 1 178                                 | 11                  |                                    |    |    |    |    | 46.5              |
| 233. | USA        | Palo Verde-1     | 1 307                                 | 12                  |                                    |    |    |    |    | 46.5              |
| 234. | USA        | Brunswick-2      | 849                                   | 12                  |                                    |    |    |    |    | 45.1              |
| 235. | USA        | Brown's Ferry-3  | 1 098                                 | 10                  |                                    |    |    |    |    | 42.6              |
| 236. | Taiwan     | Maanshan-1       | 952                                   | 3                   |                                    |    |    |    |    | 42.6              |
| 237. | USA        | Brown's Ferry-1  | 1 098                                 | 13                  |                                    |    |    |    |    | 42.5              |
| 238. | USA        | Brown's Ferry-2  | 1 098                                 | 12                  |                                    |    |    |    |    | 41.2              |
| 239. | USA        | Davis Besse      | 934                                   | 10                  |                                    |    |    |    |    | 40.5              |
| 240. | USA        | Palisades        | 810                                   | 15                  |                                    |    |    |    |    | 40.3              |

\* From first electricity to Dec. 31, 1987

BWR

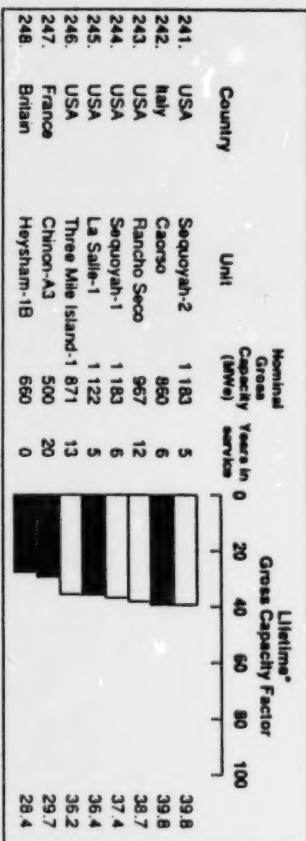
PWR

CANDU-PHW

GCR

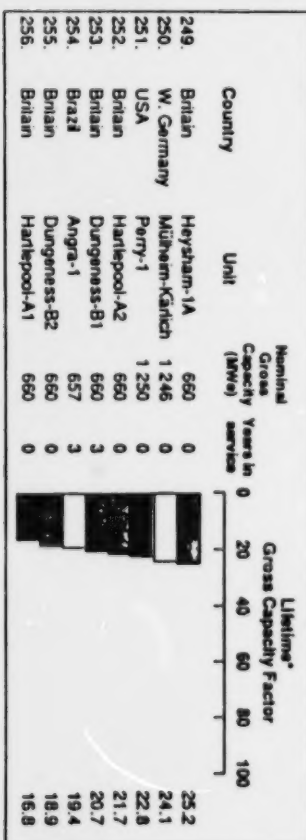


# **LIFETIME\*** **WORLD NUCLEAR POWER REACTOR PERFORMANCE** Units 500 MWe and over which produced electricity prior to January 1, 1987



■ BWR □ PWR ▣ CANDU-PHW ■ GCR

\* From first electricity to Dec. 31, 1987



**APPENDIX E**

**INTERGOVERNMENTAL AGREEMENT  
ON THE REDUCTION OF INTERPROVINCIAL BARRIERS  
TO TRADE RELATED TO GOVERNMENT PROCUREMENT**

**September, 1988**

INTERGOVERNMENTAL AGREEMENT  
ON THE REDUCTION OF INTERPROVINCIAL BARRIERS TO TRADE  
RELATED TO GOVERNMENT PROCUREMENT

PREAMBLE

WHEREAS the governments participating in this agreement wish to:

- reaffirm the principles set out in the Intergovernmental Position Paper on Regional Development of June 1985 and, in particular, the view that, as a general rule, increased interprovincial trade will lead to productivity improvements and enhanced economic activity in Canada;
- recognize at the same time the special development needs of certain regions and sectors of the economy;
- note the decision by First Ministers at their November 1987 Annual Conference to establish a Committee of Ministers on Internal Trade thereby re-affirming and giving further direction to the initiative to reduce interprovincial barriers to trade;
- restate their commitment to promote opportunities for enhanced liberalization of procurement policies with the reduction or removal of barriers between provinces; and

- reaffirm their commitment to the Common Procurement Principles in Support of Geographic Neutrality set out in the Report on Public Sector Procurement Initiatives approved by First Ministers in November, 1987, (Annex A).

NOW THEREFORE, Canada and the Provinces have accepted the terms of the following Agreement, which shall be known as the Intergovernmental Agreement on the Reduction of Interprovincial Trade Barriers related to Government Procurement, and the Northwest Territories and Yukon Territory have indicated that they also wish to adhere to the Agreement on the basis set out in paragraph 11(d) of this Agreement.

SUBJECT MATTER OF AGREEMENT

1. All forms of discrimination based on the Province of origin of goods or suppliers of goods covered by this Agreement shall be eliminated from the procurement practices of participating governments, except as otherwise stated in this Agreement. The discriminatory practices that shall be eliminated include but are not limited to the following:
  - (a) registration requirements and restrictions on invitations to tender based upon the location of a supplier's head office, manufacturing plant or like criteria and, generally, qualification procedures which discriminate between suppliers by province of origin;
  - (b) the biasing of specifications in favor of or against particular companies' products or products from a particular region for the purposes of circumventing this Agreement;

- (c) the timing of contract opening and closing so as to prevent qualified Canadian sources from developing proposals and submitting compliant bids;
  - (d) specifying quantities and delivery schedules of a scale and frequency which may reasonably be judged as deliberately designed to prevent qualified Canadian sources from meeting requirements;
  - (e) dividing required quantities in a way designed to circumvent the Agreement;
  - (f) consideration of provincial content or employment in the evaluation of bids;
  - (g) the practice of using a price discount factor to give preference to local suppliers;
  - (h) giving preference of any kind to selected bids after bids have been submitted and without having warned of the intended preference in the request for tender documents;
  - (i) the unjustifiable exclusion of a qualified supplier from eligibility to tender on a contract.
2. It is agreed that besides price, Government procurement practices may still take into account: quality, quantity, delivery and servicing capabilities.

#### DEFINITIONS

3. For the purposes of this Agreement,
- (a) The term "procurement" is restricted to procurement of goods but includes purchase, lease and rental of goods



- (b) "qualified supplier" refers to those suppliers that are considered capable of fulfilling the procurement under consideration based on an assessment of their financial, technical and commercial capacity, regardless of whether the qualification process involves the use of source lists;
- (c) "Committee of Ministers on Internal Trade" means the Committee of Ministers established by First Ministers at their November 1987 Annual Conference;
- (d) "Participating government" means a government which has signed this Agreement.

#### SCOPE

- 4. This Agreement is intended to remove barriers to internal trade by making procurement activities by governments in Canada open and fair. Therefore, the participating governments have agreed to give this Agreement the following scope:
  - (a) this Agreement shall apply to procurement contracts over \$25,000 that may be awarded by or for government department(s) of the participating governments;
  - (b) any participating government may exclude a particular procurement from this Agreement for economic development purposes subject to Articles 5 and 6.

#### REPORTING OF EXCLUSIONS

- 5. (a) Participating provincial governments shall report annually to the Committee of Ministers on Internal Trade any exclusions made by them pursuant to paragraph 4(b).

- (b) the annual report of each participating provincial government to the Committee of Ministers on Internal Trade shall contain the following information for each exclusion: the total value of annual procurement; the total value of exclusions from the agreement over \$25,000; a description of the procurement contract; the reasons for the exception; the recipient of the contract; the date of award; and the total value of the contract.
- (c) the federal government shall make an annual summary report on the exceptions referred to in paragraph 4(b) to the Committee of Ministers on Internal Trade and shall make the information for each exception available upon request.

#### REMOVAL OF PROCUREMENT PREFERENCES

- 6.1 Participating governments shall put in place 100 percent national open tendering procedures for all procurement contracts covered by this Agreement through the elimination of the exclusions referred to in paragraph 4(b), by April 1, 1992.
- 6.2 The target and progress towards the target referred to in Article 6.1 shall be reviewed annually by the Committee of Ministers on Internal Trade.
- 6.3 Each participating government shall disclose its tendering policies, procedures and practices in the Guide to Government Procurement in Canada.

OPEN TENDERING PROCEDURES

7.1 (a) Contracts referred to in paragraph 4(a) of this Agreement shall be subject to open tender on the basis of the Common Procurement Principles in Support of Geographic Neutrality listed in Annex A. Open tendering procedures, for the purposes of this Agreement, refers to competitive procedures used for soliciting bids of a value of \$25,000 or more that respect the principles of openness, fairness and accessibility;

(b) Tendering procedures shall be considered to be open if the conditions set forth in paragraphs 7.2 (a) and (b) are met.

7.2 (a) In order to ensure that source lists are accessible to qualified suppliers participating governments shall respect the following requirements:

(i) conditions for inclusion of suppliers on source lists shall respect the principles of fairness and non-discrimination. Selection of suppliers among those listed shall also respect the principles of fairness and non-discrimination.

(ii) semi-annual public invitation for registration on source lists including procedures for registration shall be advertised in the designated publication referred to in subparagraph 7.2(b)(ii) of this Article. Participating governments may add qualified suppliers to source lists at any time.

(iii) when contracts are awarded through the use of source lists, governments upon request shall notify participating bidders on the procurement contract of the recipient of the contract and its total value.

7.2 (b) Where a source list is not used participating governments shall comply with the following procedural requirements:

- (i) each government shall designate an easily accessible publication which shall be used for the publication of notices referred in subparagraph 7.2(b)(ii) of this Article;
- (ii) an invitation to participate in a procurement shall be issued through a notice in such publication;
- (iii) the notice of proposed purchase shall provide for time limits that are consistent with Article 1 of this Agreement;
- (iv) notices referred to in subparagraph 7.2(b)(iii) of this Article shall state that the procurement shall be subject to this Agreement and is open to suppliers from participating jurisdictions;
- (v) notices shall provide the basic information about the upcoming procurement as well as a contact point where technical specifications or additional information may be obtained.

7.3 Where an exclusion from open tendering is made pursuant to paragraph 4(b), the notices required by subparagraph 7.2(b)(ii) shall specify any limitations and highlight practices that deviate from the Common Procurement Principles in Support of Geographic Neutrality and the open-tendering procedures.

7.3 The provisions of Articles 7.1 and 7.2 governing open tendering procedures need not apply in the following circumstances, provided single or sole source tendering is not used with a view to circumventing this Agreement:

- (i) where the procurement relates to an unforeseeable emergency situation and the product cannot be obtained in time by means of an open tendering process;
- (ii) where the procurement relates to the protection of exclusive rights, such as patents, or where the existing equipment compels the procurement authority to purchase from the original supplier for reasons of compatibility;
- (iii) where the procurement relates to the products of handicapped persons, philanthropic institutions, prison labour or to affirmative action programs;
- (iv) where the procurement is for the purpose of research and development or where it involves the production of a prototype or original development. It is understood that subsequent purchases of these products shall be subject to Articles 7.1 and 7.2 governing open tendering procedures; and
- (v) where the procurement takes place under the terms and conditions of a contract existing at the time this Agreement enters into force;

- (vi) where the procurement relates to the enforcement of order, safety, national security or defense.

FEDERAL GOVERNMENT

8. Nothing in this Agreement shall prevent the federal government's use of procurement to pursue national regional and industrial development objectives.

LANGUAGES

9. Language requirements for the notice of proposed purchase, tenders, responses, information and registration shall be specified by the government concerned.

COMPLAINTS AND MONITORING PROCEDURES

10. (a) Representations regarding the identification of a discriminatory practice prohibited by this Agreement shall be made directly to the governments concerned with a view to resolving the matter;
- (b) Each government shall establish a point of contact, with the authority and responsibility to investigate, to which appeals from a decision by a government pursuant to representations referred to in paragraph (a) of this Article may be addressed;
- (c) A government may make representations to another government on behalf of a complainant within its jurisdiction which has alleged discrimination and has had no satisfaction;



- (d) A government which has espoused a complaint without success and considers it a serious breach of this Agreement may refer the matter to the Committee of Ministers on Internal Trade.

**ENTRY INTO FORCE**

- 11. (a) This Agreement shall enter into force for Canada, \_\_\_\_\_ (list the original signatories) on April 1, 1989;
- (b) This Agreement shall remain open for signature by any other provincial or territorial government. For such participating government, the Agreement shall enter into force on April 1, 1989 or on the date of signature, whichever is later;
- (c) When the Government of Newfoundland signs this Agreement it accepts the principles of this Agreement but in order to respond to its immediate economic development concerns Newfoundland shall be allowed additional time to implement Article 6.1 of this Agreement. The timing and extent of Newfoundland's participation will be reviewed annually;
- (d) When the Government of the Northwest Territories or of the Yukon Territory signs this Agreement, it shall have the same rights and obligations as the Provinces, except that it:
  - (i) need not apply Articles 7.1 and 7.2 of this Agreement;

- (ii) shall apply the Common Procurement Principles in Support of Geographic Neutrality annexed to this Agreement to requests for tender to be supplied from other jurisdictions; and
  - (iii) shall give advance notice in the request for tender documents if they intend to apply local preferences.
- (e) Each government shall inform the Committee of Ministers on Internal Trade of any changes in its laws and regulations relating to the subject matter of this Agreement.

#### WITHDRAWAL

12. Any participating government may withdraw from this Agreement by giving twelve months' notice in writing to the other participating governments.

#### FURTHER NEGOTIATIONS

13. Within twelve months from the date of entry into force of this Agreement the participating governments shall undertake further negotiations to extend the principles of this Agreement to other procurement activities particularly in the areas of construction and services.

## ANNEX A

COMMON PROCUREMENT PRINCIPLES  
IN SUPPORT OF GEOGRAPHIC NEUTRALITY

To provide suppliers and the public with a greater understanding of the policies and procedures which guide government procurement and to demonstrate that all jurisdictions operate on the same basic principles, Ministers approved the following statement of principles, consistent with Canada's international trade obligations, in support of geographic neutrality:

The principles of geographic neutrality are:

1. Access: All qualified firms that are interested in becoming government suppliers shall be given equitable access to the contract opportunities of their governments.
2. Competition: Government contracting authorities shall meet their goods and services requirements through a fair acquisition process based on the highest degree of competition consistent with an efficient and cost-effective procurement system.
3. Policies: Government contracting policies and practices shall not impose conditions which are counter to the principles of geographic neutrality. For example, any prescribed time-limit for the submission of tenders must be adequate to permit all interested and qualified suppliers to respond, wherever they may be located; and
4. Transparency: Governments may wish to establish specific policies or procurement practices which are exceptions to the principles of geographic

neutrality, but such policies and practices must be identified, made known and clearly identified as such.

To complement these principles, areas of acceptable deviations are recognized, as purchasing organizations have a responsibility to ensure the efficient operation of their procurement systems. The conditions under which government entities could adopt policies or practices which do not meet the principles of geographic neutrality are:

1. for minimal dollar purchases, where the cost of administering an unrestricted tendering process would exceed the value of the goods and services required or represent an incommensurate portion of the costs such that it would be prohibitive and, therefore, not in the public interest;
2. for reasons connected with the protection of exclusive rights, such as patents or copyrights, where the products can be supplied only by a particular supplier and no reasonable substitute exists;
3. for reasons of justified emergency brought about by events unforeseeable by the contracting authority or for reasons of national security; and
4. for regional development purposes, when restricted competition is used by the contracting authority with the specific objective of enhancing economic or industrial development in a particular area.

In addition, to ensure transparency and discipline, governments accept a responsibility to make public the specific policies and practices which deviate from the principles of geographic neutrality for any of the reasons outlined above.

APPENDIX F

NELSON/BURNTWOOD COLLECTIVE AGREEMENT

LETTER OF AGREEMENT NO. 11



NELSON/BURNTWOOD COLLECTIVE AGREEMENT

Letter of Agreement No. 11

Subject: Special Measures for Northern Residents of Native Ancestry and Formation of a Northern Resident Employment Committee in respect of the Henday (Bipole 2) and Limestone Projects.

Whereas the Association and the Council are desirous of continuing to provide employment opportunities to Northern Residents;

And whereas the Association is desirous of introducing special measures to facilitate the entry and progression of Northern Residents of Native Ancestry into available positions on the Project.

Now therefore to this end, the Association and the Council hereby agree to amend to Collective Agreement as follows:

- (1) On the date of signing of this Letter of Agreement, Letter of Agreement No. 4 dated May 5, 1982 shall be terminated.
- (2) Implementation of the provisions of this Letter of Agreement is contingent upon securing the written approval of the Human Rights Commission of the Province of Manitoba (Commission).
- (3) When the term Northern Residents of Native Ancestry is used in this Agreement, it shall mean Status Indians, metis and Non-Status Indians and Inuit who qualify as Northern Residents in accordance with the definition set out in Article 12.

- (4) The employment goals for Northern Residents of Native Ancestry shall be those set out in Table I, which is attached to and forms part of this Letter of Agreement.

In (i) (b) above, the appropriate Local union means the Union named in the Appendix containing the classification corresponding to the Contractor's job order.

For purposes of (i) (b) above, each Local Union shall compile and submit to the Council the names and social insurance numbers of all Northern Residents not of Native Ancestry who are members of that Union and who are seeking employment on the Project. The Council shall submit the current listing for the applicable Unions to C.E.I.C. by the tenth (10th) of each month commencing in February 1985. By mutual agreement between C.E.I.C. and the Council, arrangements differing from the foregoing may be instituted to ensure that the necessary information is available on a timely basis.

- (6) (a) The special employment preference provisions set out in Section (5) above shall become effective initially on April 1, 1985.
- (b) The participation rate of Northern Residents of Native Ancestry employed on the Project for each of the trades set out in Table I shall be calculated and recorded by the Association on the last working day of each month. This shall be deemed to be the participation rate for that month. A copy of the recorded participation rates shall be provided to the Council.
- (c) During the first week of April 1986 and every fourth month thereafter, the average participation rate for the applicable preceding four month period shall be calculated for each trade.

(d) Pursuant to the foregoing, if the average participation rate in any trade is determined to be less than the employment goal established for that trade, then the special measures set out in Section (5) of this Letter of Agreement shall remain in effect for a further period of four months. If, as provided for below, the special measures have not been in effect, they shall be re-introduced effective on the first of the month following the month in which the average participation rate was calculated.

(a) have been employed on the Project as a trainee or apprentice and such training was interrupted due to a lay-off, and,

(b) have performed on the job in a satisfactory manner,

(c) are registered with C.E.I.C.,

shall be referred by C.E.I.C. to the Contractor, in advance of any other Northern Residents who have not worked on the Project, to fill training vacancies as they may arise from time to time.

To facilitate the foregoing, the Contractor will advise C.E.I.C. and the Council, in writing, of the name and social insurance number of any Northern Resident of Native Ancestry employed as an apprentice or trainee who has been laid off and is eligible for rehire in the trade in which he was training. Such notification shall be provided by the tenth (10th) of each month and will cover lay-offs which occurred during the previous month.

- (8) The Association and the Council will establish a special committee which shall be known as the Northern Resident Employment Committee (N.R.E.C.). This Committee will be co-chaired by the Chairman of the Association, or his delegate and the President of the Council, or his delegate. The purpose of this Committee will be:
- (a) to develop and implement appropriate monitoring, evaluation and reporting systems
  - (b) to develop and recommend to its principles other special measures, such as work sharing and commuter programs, that may be required to rectify under representation of Northern Residents of Native Ancestry.
  - (c) in conjunction with (a) and (b) above, the solicit direct input from appropriate Northern Native Organizations.
  - (d) to monitor the participation rate of Northern Residents not of Native Ancestry.
- (13) The dates set out in Section (6) and (8) and Table I of this Letter of Agreement are predicated on an 1990 in service date for Limestone (i.e., the date first power is scheduled to be generated). If an in service date subsequent to 1990 is ultimately selected, then the dates set out in the aforementioned provisions will be correspondingly adjusted.
- (14) (a) Subject to (b) below, the Association shall defend and indemnify the Council from and against any costs arising from a suit or proceeding that is attributable to the introduction of special

employment measures for Northern Residents of Native Ancestry, as set out in this Letter of Agreement.

- (b) The Association shall have the right to assume full control of any action initiated against either the Association or the Council, or both, including the appointment of legal counsel.

Agreed to this 25th day of January A.D. 1985.

Hydro Projects Management  
Association

Allied Hydro Council  
of Manitoba

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

TABLE I

| Appendix No.<br>& Trade                 | Classification<br>(J = Journeymen;<br>A = Apprentice;<br>T = Trainee) |          | % Goal    |           |                     |
|-----------------------------------------|-----------------------------------------------------------------------|----------|-----------|-----------|---------------------|
|                                         |                                                                       |          | 1985      | 1986      | Subsequent<br>Years |
| No. 1<br>Labourers                      | All classifications combined                                          |          | 45        | 45        | 45                  |
| No. 1a<br>Security Guards               | All classifications combined                                          |          | 25        | 30        | 35                  |
| No. 2<br>Operating Engineers            | Heavy Duty<br>Mechanics                                               | J<br>A/T | 10<br>(4) | 10<br>(4) | 10<br>(4)           |
|                                         | All other classi-<br>fications, except<br>Crane Operators             | J<br>A/T | 20<br>60  | 25<br>60  | 30<br>60            |
| No. 3<br>Teamsters                      | Journeymen                                                            |          | 20        | 25        | 30                  |
|                                         | Trainees                                                              |          | 60        | 60        | 60                  |
| No. 4<br>Carpenters                     | Journeymen                                                            |          | 10        | 10        | 15                  |
|                                         | Apprentices                                                           |          | 60        | 60        | 60                  |
| No. 4a<br>Millwrights                   | Journeymen                                                            |          | No Demand |           | 10                  |
|                                         | Apprentices                                                           |          | No Demand |           | 60                  |
| No. 12<br>Ironworkers                   | Journeymen                                                            |          | 0         | 10        | 10                  |
|                                         | Apprentices                                                           |          | 60        | 60        | 60                  |
| No. 12a<br>Rebar                        | Journeymen                                                            |          | 0         | 15        | 15                  |
|                                         | Apprentices                                                           |          | 60        | 60        | 60                  |
| No. 13<br>Electricians                  | Journeymen                                                            |          | 0         | 10        | 10                  |
|                                         | Apprentices                                                           |          | 60        | 60        | 60                  |
| No. 14<br>Pipefitters                   | Journeymen                                                            |          | 0         | 10        | 10                  |
|                                         | Apprentices                                                           |          | 0         | 60        | 60                  |
| No. 15<br>Office Workers<br>& Surveyors | Non-Trainees                                                          |          | 15        | 15        | 15                  |
|                                         | Trainees                                                              |          | 60        | 60        | 60                  |
| No. 16<br>Caterers                      | Journeymen & Non-Trainees                                             |          | 20        | 20        | 25                  |
|                                         | Trainees                                                              |          | 60        | 60        | 60                  |



Explanatory Notes Relative to Table I

- (a) Employment goals have been established for certain trades and for this purpose each Appendix of the Collective Agreement constitutes a trade.
- (b) With the exception of Labourers (Appendix No. 1) and Security Guards (Appendix Nol 1a), separate goals have been established for the remaining trades set out in Table I on the following basis:
  - (i) A collective goal for Journey man status classifications (i.e., an employee who generally meets or exceeds the required trade and/or experience qualifications); however it should be noted that in the case of Operating Engineers (Appendix 2), Journeyman status classifications have been grouped into two categories and employment goals have been assigned for each grouping.
  - (ii) in accordance with (i) above, a collective goal for training classifications (i.e., apprentices and/or trainees).
- (c) The employment goal in all cases is expressed as a percent; and,
  - (i) in the case of the Labourers and Security Guards, as a percentage of the total number of employed by the Contractor in that trade.
  - (ii) in the case of Journeyman status employees in all remaining trades, as a percentage of the total number of Journeyman status employees employed by the Contractor in that trade.

- (iii) in the case of training classification, as a percentage of the total apprentices and/or trainees permitted to be employed by the Contractor in that trade by virtue of the Journeyman to apprentice (trainee) ratios set out in the Appendices of the Collective Agreement.

APPENDIX G

CANADA-MANITOBA LIMESTONE  
TRAINING AGREEMENT

CANADA-MANITOBA LESTONE PROJECT EMPLOYMENT AND TRAINING AGREEMENT

THIS AGREEMENT entered into this 19th day of September, 1985

BETWEEN:

THE GOVERNMENT OF CANADA as represented herein by the Honourable the Minister of Employment and Immigration and the Honourable the Minister of Indian Affairs and Northern Development (hereinafter called "CANADA")

OF THE FIRST PART

AND

THE GOVERNMENT OF THE PROVINCE OF MANITOBA, as represented herein by the Honourable the Minister of Employment Services and Economic Security and the Honourable the Minister of Responsible for the Limestone Training and Employment Agency (hereinafter called "the PROVINCE")

OF THE SECOND PART

WHEREAS the PROVINCE is undertaking construction of the Limestone Generating Station to expand its hydroelectric generating capacity on the Nelson River System; AND WHEREAS the Hydro Projects Management Association of employers and the Allied Hydro Council of Manitoba unions have set out certain hiring preferences in their Nelson/ Burntwood Collective Agreement and these hiring preferences are in favour of Northern Residents of Native Ancestry, Northern Residents who are members of an appropriate union of the Council and Other Northern Residents; AND WHEREAS CANADA and the PROVINCE each operate certain employment services, employment support services, training programs and programs of financial assistance to individuals and organizations which can be applied in support of the new economic activities generated by the Limestone project; AND WHEREAS CANADA and the PROVINCE wish to identify through this Agreement their common efforts relating to the operation of

employment services, employment support services and occupational training services and to the management and coordination of these programs and services to meet the special needs created by the Limestone project;

AND WHEREAS the Governor-in-Council by Order-in-Council P.C. 985-2805 of the 19th day of September, 1985 has authorized the Minister of Employment and Immigration and the Minister of Indian Affairs and Northern Development to execute this Agreement on behalf of CANADA;

AND WHEREAS the Lieutenant Governor-in-Council by Order-in-Council No. 1016/85 of the 4th day of September, 1985 has authorized the Minister of Employment Services and Economic Security and the Minister Responsible for the Limestone Training and Employment Agency to execute this Agreement on behalf of the PROVINCE;

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the foregoing and the covenants and conditions herein contained, the parties agree as follows.

#### DEFINITIONS

1. Unless otherwise specified all of the terms and conditions used in this Agreement shall have the same meaning as they have in the Statutes and the Regulations under which the programs and services herein to be applied are operated.
  - a. Limestone Project refers to the construction of the Limestone Generating Station, the construction of related transmission lines, the related environmental protection and restoration, the operation and maintenance of the construction camp and direct services to the construction of the Limestone Generating Station.



- b. Nelson/Burntwood Collective Agreement refers to the collective agreement between the association of employers known as the Hydro Projects Management Association and the association of unions known as the Allied Hydro Council of Manitoba.
- c. Federal Ministers refers to the Minister of Employment and Immigration and the Minister of Indian Affairs and Northern Development.
- d. Provincial Ministers refers to the Minister of Employment Services and Economic Security and the Minister Responsible for the Limestone Training and Employment Agency.
- e. Canadian Jobs Strategy refers to the new approach to labour market development, to the new approaches to consultation and coordination with the economic partners of CANADA and to the six new labour market programs introduced in 1985 as a first step in implementing the new Strategy.
- f. Hiring Preferences refers to the special employment preference provisions set out in Letter of Agreement No. 11 which is appended to and forms part of the Nelson/Burntwood Collective Agreement.
- g. Northern Resident refers to an individual who meets the residency requirements as set out in Article 13 of the Nelson/Burntwood Collective Agreement.
- h. Northern Resident of Native Ancestry refers to a Status Indian, a Non-Status Indian, a Metis or Inuit who qualifies as a Northern Resident under Article 13 of the Nelson/Burntwood Collective Agreement.

- i. Northern Community refers to a community within Census Division 16 and within that part of Census Division 19 which lies north of the Winnipeg River as defined for the 1971 Census.
- j. Limestone Training and Employment Agency refers to the post-secondary training agency established by the PROVINCE to administer the timely delivery of occupational training services to Northern Residents to prepare them for employment on the Limestone project and for related employment created as a result of the Limestone project.
- k. Limestone Aboriginal Partnership Directorate Board refers to an association of participating Native groups which was formed in February, 1985 to promote the interests of its members in respect of the opportunities created by the Limestone project.
- l. Canada-Manitoba Labour Market Needs Committee refers to the federal/provincial committee established under section 8 of the Canada-Manitoba Training Agreement.
- m. Fiscal Year refers to a twelve month period beginning on April 1st and ending on March 31st.

#### BASIC PRINCIPLES

- 2. The implementation of this Agreement will be guided by the following basic principles:
  - a. The social and economic objectives of CANADA and the PROVINCE for the Limestone project can best be attained through consultation, cooperation and coordination to the fullest extent;

- b. Operations will be directed towards the continued strengthening of the various programs and services and to the avoidance of unnecessary duplication of the programs and services;
- c. Programs and services will be sensitive to both the needs of northern residents, particularly those of Native, ancestry, to obtain and maintain employment and to the needs of employers to obtain qualified workers;
- d. Programs and services will be sensitive to the ongoing labour market requirements for skilled labour in northern communities and elsewhere;
- e. Programs and services will be sensitive to both short and long term training and employment needs of persons who are assisted through them;
- f. Information about the employment opportunities will describe accurately the extent of occupational demand, the nature of the work and the worker qualifications required;
- g. An appropriate range of employment support services will be available to assist persons to whom the hiring preferences apply to obtain the available jobs, to adjust to the work environment and to maintain employment;
- h. Community groups representing Northern Residents, particularly those of Native Ancestry, will be consulted on matters affecting the delivery of services to their members;

- i. Responsibility for the collection, distribution and use of the management information required for effective consultation, cooperation and coordination in the operation of the programs and services will be shared equally by the parties.

#### EMPLOYMENT SERVICES

3. CANADA undertakes, pursuant to the Unemployment Insurance Act (1971), the National Employment Service Regulations and the principles of employment equity, to operate an effective employment service on behalf of the employers and the persons seeking work on the Limestone Project. These services will include:
  - a. consulting with employers to determine the nature and extent of the demand for workers and to develop job description and job orders which do not contain information which would create artificial barriers to the employment of any persons, particularly to those to whom the hiring preferences apply;
  - b. developing and implementing mechanisms, in cooperation with the PROVINCE and appropriate other agencies, to distribute information about the Limestone project to individuals and organizations to ensure that all interested and qualified persons, particularly those to whom the hiring preferences apply, have access to the employment opportunities;
  - c. taking job order information from employers and distributing the information to appropriate offices of the Canada Employment Centre network, to the PROVINCE and to other agencies as required to ensure effective exposure of job opportunities;

- d. registering persons who are interested in employment on the Limestone project in order to acquire and maintain suitable information about them to determine their availability for referral and their qualifications in respect of available and potential jobs;
  - e. selecting and referring registered and qualified clients to employers in respect of job openings;
  - f. providing these employment services to trainees and graduates of courses administered by the Limestone Training and Employment Agency'
  - g. maintaining appropriate records of job orders, registrations for employment and referral and placement activities in order to report on operations.
4. In order to operate the employment services CANADA undertakes to:
- a. develop and implement the necessary special directives and procedures;
  - b. establish an office at the Limestone construction site as provided for in Part 11 of this Agreement;
  - c. extend its online employment services computer system to Canada Employment Centres in Thompson, The Pas, Flin Flon and Dauphin and to the office at the Limestone construction site;
  - d. cooperate with the PROVINCE in the development and implementation of a joint registration process;

- e. cooperate with the PROVINCE to establish and maintain access points for employment services to residents of Northern Communities;
  - f. ensure that appropriate quality control and monitoring systems are applied;
  - g. make information available to the PROVINCE as required and through the Canada-Manitoba Labour Market Needs Committee in accordance with jointly established procedures for reporting;
  - h. pay all of the direct operating costs incurred by CANADA to operate the employment services herein described.
5. The PROVINCE undertakes to cooperate with and assist CANADA in the operation of employment services by:
- a. providing information about employment on the Limestone project to individuals and organizations.
  - b. assisting persons to register for employment with a Canada Employment Centre by interviewing them to acquire the necessary information for registration and forwarding such information to the Canada Employment Centre and/or arranging for such persons to register in person by providing available information to keep registrations current;
  - c. assisting the Canada Employment Centres to locate individuals when required to facilitate the provision of employment services to them;



- d. providing information to Canada Employment Centres on the progress, availability for referral and the qualifications of trainees and current graduates of courses operated by the Limestone Training and Employment Agency.
6. In order to assist CANADA in the operation of the employment services, the PROVINCE undertakes to:
- a. develop and implement the necessary special directives and procedures;
  - b. establish an office at the Limestone construction site as provided for in Part ii of this Agreement;
  - c. cooperate with CANADA in the development and implementation of a joint registration process;
  - d. cooperate with CANADA to establish and maintain access points for employment services to residents of Northern Communities;
  - e. ensure that appropriate quality control and monitoring systems are applied;
  - f. make information available to CANADA as required through the Canada-Manitoba Labour Market Needs Committee in accordance with jointly established procedures for reporting;
  - g. pay all of the direct operating costs incurred by the PROVINCE in assisting CANADA in the operation of the employment services herein described. The PROVINCE may seek funding under the Northern Development Agreement to meet part of this financial obligation.

EMPLOYMENT SUPPORT SERVICES

7. CANADA and the PROVINCE undertake to develop and implement enhanced employment support services for Northern Residents, particularly those of Native ancestry, who need help in arranging their personal affairs in order to be able to take advantage of the employment opportunities on the Limestone project. These services will include:
- a. organizing and conducting community group orientation to inform individuals and organizations about the Limestone project and the related employment services, employment support services and the opportunities for occupational training;
  - b. providing individual and family services at the community level to address a range of concerns including the maintenance of the family unit, coping with loneliness, adjusting to unfamiliar environments and financial management;
  - c. providing financial assistance to individuals, dependent upon their financial need, for the purchase of suitable work clothing, safety wear and basic tools;
  - d. providing personal counselling, crisis intervention, cross-cultural awareness sessions and orientation to the working and living environments at the Limestone construction site;
  - e. coordinating employment support services in Northern Communities and at the Limestone construction site making maximum use of existing community resources.

8. In order to operate the employment support services, the PROVINCE undertakes to:
  - a. deploy staff to provide these services directly or jointly with other service organizations and agencies and where appropriate, arrange by means of contract or other instrument for the provision of the necessary services by Native organizations and other organizations;
  - b. develop and implement the necessary special directives and procedures and make these available to organizations which are directly or indirectly involved in the delivery of employment support services;
  - c. develop and implement mechanisms to ensure that all appropriate individuals have access to employment support services;
  - d. ensure that appropriate quality control and monitoring systems are applied;
  - e. make information available to CANADA as required and through the Canada-Manitoba Labour Market Needs Committee in accordance with jointly established procedures for reporting;
  - f. pay all of the direct operating costs incurred by the PROVINCE in carrying out the employment support services herein described. The PROVINCE may seek funding under the Northern Development Agreement to meet part of this financial obligation.
9. CANADA undertakes to assist the PROVINCE in the operation of employment support services by identifying clients of the Canada Employment Centres who are deemed to require

employment support services and by making arrangements with the PROVINCE or a designated agency for the provision of such services and through the services of the Department of Indian Affairs and Northern Development, assist in the provision of the necessary employment support services to Status Indians. In order to do this, CANADA undertakes to:

- a. deploy staff to provide the services directly or jointly with other service organizations and agencies and where appropriate, arrange by means of contract or other instrument for the provision of necessary services by Band Councils or other organizations;
- b. develop and implement the necessary special directives and procedures;
- c. ensure that appropriate quality control and monitoring systems are applied;
- d. make information available to the PROVINCE as required and through the Canada-Manitoba Labour Market Needs Committee in accordance with jointly established procedures for reporting;
- e. pay all of the direct operating costs incurred by CANADA in carrying out the employment support services herein described.

#### OCCUPATIONAL TRAINING

10. The importance of the Limestone project to the national economy together with the hiring preferences has given rise to a need for occupational training of different kinds and in different amounts than would otherwise be required. To ensure that suitable occupational training is available and the persons, particularly those to whom the hiring

preferences apply, have access to suitable training opportunities.

- a. the PROVINCE undertakes to establish the Limestone Training and Employment Agency, a description of which is set out in ANNEX A appended to and forming part of this Agreement, which will be responsible for the administration of all institutional occupational training services to be provided through this Agreement;
- b. CANADA undertakes to participate in the Management Committee of the Limestone Training and Employment Agency;
- c. the training provided through this Agreement will include and be limited to training for employment on the construction of the Limestone Generating Station, on the construction of related transmission lines, on related environmental protection and restoration, on related construction camp operation and maintenance and on direct services to the Limestone project;
- d. institutional occupational training courses operated through the provisions of this Agreement are expected to prepare persons for direct entry to jobs;
- e. CANADA and the PROVINCE undertake to provide financial assistance to and on behalf of trainees, a description of which is set out in ANNEX B appended to and forming part of this Agreement, which will be adequate to remove financial barriers to their participation in suitable institutional training;

- f. CANADA and the PROVINCE undertake, for each fiscal year during the term of this Agreement, to consult and determine the training courses to be funded under the provisions of this Agreement in order to meet the special needs for occupational training which arise from the Limestone project and to develop an Annual Training Plan in the format set out in ANNEX C appended to and forming part of this Agreement;
- g. CANADA and the PROVINCE undertake, for each fiscal year during the term of this Agreement, to share the costs of implementing the approved Annual Training Plan such that Canada, through the Canadian Jobs Strategy and funding provided by the Department of Indian Affairs and Northern Development, will pay for the allowable costs of conducting the training and the PROVINCE will pay all other costs including the costs of training allowances, room and board, travel allowances and other special allowances;
- h. CANADA and the PROVINCE undertake, for each fiscal year during the term of this Agreement to allocate and make available, subject to the provisions of Parts 16 and 17, the funds necessary to pay their respective share of the costs of financial assistance to and on behalf of trainees to implement the approved Annual Training Plan and to set out these allocations in ANNEX D which is to be appended to and form part of this Agreement;
- i. the PROVINCE undertakes to develop and implement a system for the payment, to or on behalf of trainees, of training allowances, room and board allowances, travel allowances and other special allowances and to provide to CANADA copies of the directives and procedures applicable to the administration of the system, copies.



of course outlines and copies of the directives and procedures applicable to course admission, trainee attendance, trainee accreditation and certification and instructor certification.

- j. CANADA and the PROVINCE undertake to develop and implement a system for the recruitment and selection of trainees a description of which is set out in ANNEX E appended to and forming part of this Agreement;
- k. the PROVINCE undertakes to make reports on the operation of the Limestone Training and Employment Agency through the Canada-Manitoba Labour Market Needs Committee in accordance with jointly established procedures for reporting.

#### ESTABLISHMENT OF OFFICES AT THE CONSTRUCTION SITE

- 11. CANADA and the PROVINCE undertake to establish and operate offices, to co-located as practical, at the Limestone construction site to facilitate access to and by the contractors, the employees and residents of the construction camp, the Hydro Project Management Association and the Allied Hydro Council of Manitoba. For their respective offices, the parties will make arrangements with Manitoba Hydro for suitable office space, provide all the necessary equipment (including telecommunications equipment and services), hire and supervise their own staff and pay all of the direct operating costs incurred by each of them to establish and operate their offices.

#### INFORMATION SHARING

- 12. CANADA and the PROVINCE undertake to make available to each other information about the operation of their respective programs and services including their outcomes, information about labour market conditions and information about clients

who are provided with employment services, employment support services and occupational training services.

13. In accordance with the provisions of the Unemployment Insurance Act (1971) and the Privacy Act for the use and disclosure of personal information, the parties undertake not to release personal information obtained through the provisions of this Agreement without written authorization of the party supplying such information, to respect the confidentiality of such information and to use it solely for the purpose for which it was obtained.

#### PUBLICITY

14. CANADA undertakes to give appropriate mention to the role of the PROVINCE in any publicity originated by it in respect of its activities under this Agreement. Similarly, the PROVINCE undertakes to give appropriate mention to the role of CANADA in any publicity originated by it in respect of its activities under this Agreement.

#### CONSULTATIONS WITH COMMUNITY ORGANIZATIONS

15. CANADA and the PROVINCE undertake to consult on matters related to the implementation of this Agreement with community organizations, particularly the Limestone Aboriginal Partnership Directorate Board representing Northern Residents of Native Ancestry, which have an interest in the economic and labour market development effects of the Limestone project. A framework for participation of the Limestone Aboriginal Partnership Directorate Board is set out in ANNEX G which is appended to and forms part of this Agreement.

#### LIMITS ON FINANCIAL OBLIGATIONS

16. Expenditures by CANADA for its share of financial assistance on behalf of trainees participating in occupational training

courses pursuant to Part 10 of this Agreement shall not exceed eighteen million dollars (\$18,000,000).

17. Expenditures by the PROVINCE for its share of financial assistance to and on behalf of trainees participating in occupational training courses pursuant to Part 10 of this Agreement shall not exceed twelve million dollars (\$12,000,000).
18. The financial obligations of CANADA are subject to the express condition that there be an appropriation by the Parliament of Canada for the funds necessary therefor for the fiscal year in which any obligation hereunder would come in course of payment.
19. The financial obligations of the PROVINCE are subject to the express condition that there be an appropriation by the Legislative Assembly of Manitoba for the funds necessary therefor for the fiscal year in which any obligation hereunder would come in course of payment.

PAYMENTS BY CANADA TO THE PROVINCE FOR OCCUPATIONAL TRAINING SERVICES

20. CANADA undertakes to make payments, for its share of financial assistance on behalf of trainees, to the PROVINCE in accordance with the following:
  - a. payments shall be made on the basis of quarterly claims, in the form set set out in ANNEX F appended to and forming part of this Agreement, setting out the costs actually incurred and paid;
  - b. interim payment may be made on a quarterly basis based on the estimated costs of implementing the training courses in the applicable quarter of the approved Annual Training Plan;

- c. the PROVINCE shall account for each quarterly interim payment received under Part 20.b by submitting to CANADA within the first two months of the following quarter a detailed statement of expenditures actually incurred and paid, submitted in the form set out in ANNEX F and certified by the Manitoba Department of Finance; any difference between the amount paid by CANADA by way of interim payments and the amount actually payable by CANADA will be promptly adjusted between the parties;
- d. an interim payment shall not be made in respect of any fiscal year after 1985-1986 until the interim payments made in the previous fiscal year have been liquidated by claims for expenditures actually incurred and paid and any outstanding balance of payment has been repaid or otherwise accounted for in a manner satisfactory to the parties.
- e. the PROVINCE undertakes to keep proper accounts and records relating to the expenditures for occupational training provided through this Agreement and to make these available at all times to inspection and audit by CANADA or its authorized representatives.

#### MANAGEMENT AND COORDINATION

- 21. Upon the execution of this Agreement, the Co-Chairpersons of the Canada-Manitoba Labour Market Needs Committee will become responsible for:
  - a. ensuring that the intent and conditions of this Agreement are carried out;
  - b. ensuring that the annexes which are to be appended to and form part of this Agreement are developed and

revised from time to time to keep them current with the provisions of this Agreement;

- c. reviewing and approving the annual work plans which are required to implement the provisions of this Agreement;
  - d. establishing a monitoring and reporting system and such procedures as are required to evaluate the effectiveness of the programs and services which are operated under this Agreement;
  - e. preparing an annual report to the Federal Ministers and the Provincial Ministers for each fiscal year during the term of this Agreement.
22. The Federal Ministers and the Provincial Ministers undertake to consult as required on the ongoing implementation of this Agreement and to review the annual reports prepared pursuant to part 21.e.

#### TERM OF THE AGREEMENT

23. This Agreement shall be effective from and including the first day of April, 1985 until the thirty first day of March, 1992.

#### TERMINATION AND AMENDMENT

24. During the term hereof, this Agreement may be terminated by either party by giving notice thereof to the other party at any time and in the event that such notice is given, the Agreement shall terminate on March 31st of the fiscal year following the fiscal year in which the notice is given.
25. During the term hereof, this Agreement may be amended by written agreement between the Federal Ministers and the Provincial Ministers, on the condition that financial

commitments set out in Parts 16 and 17 may only be amended by the Governor-in-Council and the Lieutenant Governor-in-Council.

26. Annexes to the Agreement may be amended by written agreement between the co-chairpersons of the Canada-Manitoba Labour Market Needs Committee.

LIST OF ANNEXES

27. The following annexes are to be appended to and form part of this Agreement:

- Annex A - Description of the Limestone Training Employment Agency;
- Annex B - Schedule of Financial Assistance for Occupational Training;
- Annex C - Format for Annual Training Plan;
- Annex D - Annual Allocation of Funds for Occupational Training;
- Annex E - Recruitment and Selection of Trainees for Occupational Training;
- Annex F - Claim for Payments by CANADA to the PROVINCE for Occupational Training Services;
- Annex G - Participation of the Limestone Aboriginal Partnership Directorate Board in the Implementation of this Agreement.

IN WITNESS WHEREOF this Agreement has been executed on behalf of CANADA by the Minister of Employment and Immigration and the Minister of Indian Affairs and Northern Development and on behalf of the PROVINCE by the Minister of Employment Services and Economic Security and the Minister Responsible for the Limestone Training and Employment Agency.



IN THE PRESENCE OF

GOVERNMENT OF CANADA

---

Witness

---

Minister of Employment  
and Immigration

---

Witness

---

Minister of Indian Affairs  
and Northern Development

GOVERNMENT OF THE PROVINCE  
OF MANITOBA

---

Witness

---

Minister of Employment Services  
and Economic Security

---

Witness

---

Minister Responsible for the  
Limestone Training and  
Employment Agency

ANNEX A - DESCRIPTION OF THE LIMESTONE TRAINING AND EMPLOYMENT AGENCY

1. The Limestone Training and Employment Agency was established by the Government of Manitoba in January of 1985 under the legislative authority of the Manitoba Energy Authority Act, Section 4. The Agency reports to the Minister Responsible for the Limestone Training and Employment Agency.
2. The Minister Responsible for the Limestone Training and Employment Agency is advised by an Executive Board comprised of representatives of the Hydro Projects Management Association, the Allied Hydro Council of Manitoba, Manitoba Hydro, the contractors and the Limestone Aboriginal Partnership Directorate Board.
3. The Limestone Training and Employment Agency is governed by a Management Committee comprised of:
  - a. a Chairperson appointed by the Minister Responsible for the Limestone Training and Employment Agency;
  - b. a representative of each of the Provincial Government Departments of Employment Services and Economic Security, Education, Labour, Northern Affairs;
  - c. a representative of the Treasury Board of the Government of Manitoba;
  - d. a representative of Manitoba Hydro;
  - e. a representative of the Limestone Aboriginal Partnership Directorate Board;
  - f. a representative of the Canada Employment and Immigration Commission;

- g. the Executive Director of the Agency.
4. The Management Committee has the authority and responsibility ot:
- a. review and authorize the budget of the Agency;
  - b. authorize the hiring of staff;
  - c. review, evaluate and authorize projects/activities (and their related expenditures) to be undertaken by the Agency and related Departments in support of the mandate of the Agency;
  - d. provide central coordination and monitoring of the above noted activities;
  - e. arrange for the establishment of and to monitor the progress of the Agency'
  - f. monitor the financial authority, expenditure and commitment levels delegated to the Agency;
  - g. review and coordinate periodic reports to the Ministers, Treasury Board, the E.R.I.C./Jobs Fund Board and other interested parties;
  - h. review and compile and/or coordinate budget requests and financial reports of the Agency and related Departments.
5. The staff of the Limestone Training and Employment Agency will be headed by an Executive Director who will be supported by the following principal officers:

- a. Director of Training;
  - b. Coordinator of Community Based Training;
  - c. Coordinator of Female Outreach Recruitment;
  - d. Financial-Administrative Officer.
6. The objective of the Limestone Training and Employment Agency are to:
- a. coordinate the delivery of training and employment support services for Limestone related to onsite employment through contractors, onsite employment through Manitoba Hydro, permanent positions at Limestone after construction and spin-off employment;
  - b. ensure the development of a skilled work force among Northern Residents, particularly those of Native ancestry, utilizing employment opportunities listed above and any others deemed appropriate;
  - c. ensure that individuals trained through the Agency are fully prepared and qualified to work on the job site in the occupational category which they have selected;
  - d. utilize existing training program, or combination of programs, and existing employment support services through a brokering function, and where gaps in the provision of services exist, to organize and, if necessary, deliver such services;
  - e. ensure that existing services are provided coherently and effectively;

- f. ensure that, where necessary, ancillary training services such as the training of community workers for referral of individuals to training and/or employment, and the training of supervisory staff on site, are carried out;
  - g. develop a system for the certification of previous job-proven competencies so as to expedite the available number of qualified workers for the Limestone project in instances where competency certification is not provided by existing institutions;
  - h. develop a system for educational upgrading;
  - i. develop a system for the provision of employment support services during training;
  - j. develop a roster of training services available to trainees and employees for advanced career development within Manitoba Hydro;
  - k. work with the Apprenticeship Branch, Department of Labour, to develop a decentralized apprenticeship system for those apprenticeship positions designated for Native and Northern workers;
  - l. monitor and training and employment support services carried out on behalf of the Agency;
  - m. ensure that community based training is an integral component of the training program.
7. The Limestone Training and Employment Agency is accredited by the Manitoba Department of Education to offer certificates and diplomas acknowledging the acceptance by

the Agency and the Department of Education of the educational standards achieved.

8. The Limestone Aboriginal Partnership Directorate Board will be afforded a full opportunity to be involved in the planning of training and, where appropriate, the delivery of training.
9. Where possible and appropriate the Agency will provide on site training.

ANNEX B - SCHEDULE OF FINANCIAL ASSISTANCE FOR OCCUPATIONAL TRAINING

Persons participating in occupational training courses provided under this Agreement will be, pursuant to Part 10.e of this Agreement, assisted by CANADA and the PROVINCE such that:

1. the training will be provided without tuition or other charge to them except for the costs, as applicable, of external examination fees and student association fees;
2. they will receive a training allowance, in an amount at least equal to the statutory minimum wage in the Province of Manitoba, for each hour of participation in an approved training activity;
3. they will be provided with room and board when necessary and the room and board will be arranged and paid for on their behalf by the Limestone Training and Employment Agency;
4. they will be reimbursed for commuting travel subject to the approval of the Limestone Training and Employment Agency and in accordance with the rates and conditions established by the Agency;



5. they will be reimbursed for relocation travel, or have relocation travel arranged and paid for on their behalf by the Limestone Training and Employment Agency, when it is necessary for them to move temporarily to the place of training;
6. they will be provided with, or reimbursed for the costs of, other necessities for their participation in training in accordance with rate and conditions established by the Limestone Training and Employment Agency;
7. they will be covered by Worker's Compensation while they are enrolled in a training course.

The costs of developing, organizing and operating the occupational training courses set out in the approved Annual Training Plan and the costs of administering and providing the financial assistance to and on behalf of trainees will be paid by the PROVINCE. CANADA will reimburse the PROVINCE on a course by course basis, in accordance with the provisions for cost sharing set out in Part 10.g of this Agreement and the provisions for payments by CANADA to the PROVINCE set out in Part 20 of this Agreement, for:

1. direct costs of instruction including and limited to:
  - a. the salaries of instructors and the employer's share of benefits paid on their behalf;
  - b. the costs of instructional materials provided for use by or for the instruction of trainees;
  - c. the attributable costs of rent, utilities and maintenance of facilities used for instruction;

- d. the attributable costs of renting, operating and maintaining machinery and equipment used for instruction;
  - e. the appropriate portion of the costs, attributable to the specific course, of the costs of purchasing special equipment, machinery and major tools used for instruction;
  - f. the costs of travel and sustenance of course instructors;
  - g. the appropriate costs charged to the Limestone Training and Employment Agency for occupational training courses purchased from other public and private training institutions;
  - h. assessments under the Worker's Compensation Act for trainees;
  - i. other costs which are wholly attributable to instruction and which are approved in writing by CANADA for inclusion in the direct costs of instruction.
2. an amount in respect of other expenditures not falling in the category of the direct costs of instruction but incurred by the Limestone Training and Employment Agency in support of the development, organization and operation of the occupational training courses set out in the approved Annual Training Plan and being allocated there against as a matter of fair apportionment among the following components of the administration of the Agency:
- a. the salaries and the employer's share of benefits paid on behalf of employees engaged in the immediate

supervision of instructors, developing and revising courses and instructional materials, monitoring and evaluating training programs and courses and vocational counselling;

- b. travelling expenses of the employees described in (a) above while they are engaged in activities related to occupational training courses in the approved Annual Training Plan;
- c. depreciation according to generally accepted accounting principles for furniture and general purpose equipment used by the employees described in (a) above;
- d. the cost of rent, utilities and maintenance of facilities used for the activities described in (a) above;
- e. the cost of rent and maintenance of machinery and equipment used for the activities described in (a) above;
- f. the costs administrative support services for the activities described in (a) above.

**ANNEX C - FORMAT FOR ANNUAL TRAINING PLAN**

The Annual Training Plan, to be developed pursuant to Part 10.f, shall contain the following information.

- 1. For each course, the following information:
  - a. the title of the course;
  - b. the name of the institution or organization which will be conducting the course;

- c. the location (city, town, community) where the course will be conducted;
  - d. the planned number of training places;
  - e. the duration (in days) of the course;
  - f. the estimated cost of conducting the course calculated on the basis of allowable direct costs of instruction and allowable overhead costs;
  - g. the estimated cost of training allowances, room and board allowances, travel allowances and other special allowances;
  - h. the total estimated cost of financial assistance to and on behalf of trainees (sum of f. and g.);
  - i. an appropriate occupational code to link the course to the job category in which graduates of the course would most likely be expected to be employed;
  - j. the planned start date of the course;
  - k. the planned termination date of the course;
  - l. a unique identifier code for the course.
2. For the total plan, the following information:
- a. the total estimated cost of implementing the Annual Training Plan;
  - b. the estimated costs to be paid by CANADA and the PROVINCE respectively.

ANNEX D - ANNUAL ALLOCATIONS OF FUNDS FOR OCCUPATIONAL TRAINING

Pursuant to Part 10.e and Part 10.g and subject to the limitations set out in Parts 16 and 18 of this Agreement, CANADA undertakes to make available from the allocation to the Manitoba Region for the Canadian Jobs Strategy and the Indian Community Human Resources Development Strategy \_\_\_\_\_ for the fiscal year \_\_\_\_\_ for its share of the costs of implementing the approved Annual Training Plan.

Approved on behalf of CANADA by:

\_\_\_\_\_  
Name and Title

\_\_\_\_\_  
Date

Pursuant to Part 10.e and Part 10.g. and subject to the limitations set out in Parts 17 and 19 of this Agreement, the PROVINCE undertakes to make available \_\_\_\_\_ for the fiscal year \_\_\_\_\_ for its share of the costs of implementing the approved Annual Training Plan.

Approved on behalf of PROVINCE by:

\_\_\_\_\_  
Name and Title

\_\_\_\_\_  
Date

**ANNEX E - RECRUITMENT AND SELECTION OF TRAINEES FOR OCCUPATIONAL TRAINING**

Pursuant to Part 10.j of this Agreement, the PROVINCE undertakes to develop and implement systems and procedures for the recruitment and selection of trainees for occupational training courses administered through the provisions of this Agreement. These systems and procedures will be developed and implemented in accordance with the provisions herein described.

1. The Limestone Training and Employment Agency, subject to the provisions of this Agreement, will be responsible for the recruitment and selection of trainees and for the development and implementation of the related systems and procedures.
2. Registrations for Employment taken through the joint registration process operated pursuant to Parts 4.d and 6.c of this Agreement will form the basis for the identification of potential trainees.
3. Persons selected for participation in training will meet the eligibility criteria for the selection of trainees applicable to the Canadian Jobs Strategy.
4. The following agencies will be designated by the Agency to carry out certain services, on behalf of the Agency, to assist it in recruitment of trainees;
  - a. Northern Employment Support Services of the Manitoba Department of Employment Services and Economic Security;
  - b. Canada Employment Centres;



- c. Organizations operating as extension services of Canada Employment Centres which are organized and operated through the Outreach Program of the Canada Employment and Immigration Commission.
- 5. Services to be provided by the agencies listed in 4 above will be to:
  - a. give information to clients about training programs and courses administered by the Agency;
  - b. take applications for admission to training programs and courses from persons interested in enrolling in a training program or course administered by the Agency;
  - c. provide information to their clients about the availability of places open in specific training programs and courses and about the status of applications for admission made by their clients.
- 6. To support the role of the designated agencies in assisting the Agency in the recruitment of trainees on its behalf, the Agency will:
  - a. provide the agencies with information about the training programs and courses, admission requirements, enrollment procedures, financial assistance, room and board services and regulations, travel arrangements, attendance requirements, certification standards, and other information required by their clients to assist them in making decisions about participation in training.
  - b. provide the agencies with copies of administrative procedures, forms and other supplies necessary for them

to take and forward applications for admission to specific training program and courses administered by the Agency;

- c. provide, on a regular and timely basis, reports on training place availability and on enrollments in specific training programs and courses.

ANNEX F - CLAIM FOR PAYMENTS BY CANADA TO THE PROVINCE FOR OCCUPATIONAL TRAINING SERVICES

Pursuant to Part 20 of this Agreement, the PROVINCE will submit claims to CANADA, for its share of the costs of financial assistance on behalf of trainees, in the form shown below.

ANNEX G - PARTICIPATION OF LIMESTONE ABORIGINAL PARTNERSHIP DIRECTORATE BOARD IN THE IMPLEMENTATION OF THIS AGREEMENT

In furtherance of the basic principles contained in this Agreement and pursuant to Part 15 of this Agreement, CANADA and the PROVINCE undertake to negotiate an arrangement with the Limestone Aboriginal Partnership Directorate Board with the objective of:

- a. determining a means for the Partnership Board to participate in the structure and the activities of the Canada-Manitoba Labour Markets Needs Committee in respect of matters related to the implementation of this Agreement;
- b. arranging for the Partnership Board to participate in the development of Annual Training Plans which are to prepared pursuant to Part 10.f. of this Agreement;
- c. arranging for the Partnership Board to participate in the planning, delivery and monitoring of Employment Support Services including arrangements for the funding of the

- d. arranging for the establishment of Native Worker Advocates who, amongst other responsibilities, would assist Native workers in dealing with unions, employers and the Limestone Training and Employment Agency;
- e. determining the role of the Partnership Board in monitoring and evaluating the effectiveness of occupational training, apprenticeships, employment services and employment support services.

CANADA and the PROVINCE undertake to support, as appropriate, the desire of the Partnership Board to have a presence at the Limestone construction site. It is understood that the consultations and negotiations may result in the establishment, by the Partnership Board, of an office at the construction site.

For purposes of this Annex, "arrangement" is an inclusive term which can include agreements, policy decisions, exchanges of letters or contracts.

This Annex may be amended by written agreement between the Co-Chairpersons of the Canada-Manitoba Labour Market Needs Committee and the Limestone Aboriginal Partnership Directorate Board.

The terms and conditions set out in this Annex have been reviewed and approved, on behalf of the Limestone Aboriginal Partnership Directorate Board by:

---

---

---

---

Date

**APPENDIX H ,**

**MANITOBA HYDRO**  
**PURCHASING GUIDELINES**

PURCHASING GUIDELINES FOR  
MAJOR HYDRO DEVELOPMENT PROJECTS AND  
OTHER NORTHERN PROJECTS

SCOPE

The following guidelines apply to major contracts and work activities associated with major hydro development projects as well as other northern projects performed above the Northern Affairs Boundary (Diagram A). These guidelines were developed incorporating the following premises:

1. Hydro will not knowingly incur any significant additional cost associated with any preferential business program.
2. The ERIC/Jobs Fund will absorb any identifiable premiums other than these described herein associated with such preferential business programs.
3. The Industrial Benefits Officials Committee, Purchasing Working Group will continue to assist developing programs which support priorities set out in these guidelines.
4. Manitoba Hydro will monitor and report to the board on progress in implementing these guidelines.

GUIDELINES

- 1.0 Manitoba Hydro will take practicable steps toward purchasing goods and services from Manitoba and especially Northern, Native, and Northern business.

Corporate purchasing priorities will be applied in the following order:



- 1.1 Native operated businesses in Northern Manitoba
- 1.2 Northern Manitoba Businesses
- 1.3 Manitoba Business
- 1.4 Canadian Businesses
- 1.5 Offshore Businesses

Primary factors to be considered in any preferential purchase decisions will be: 1) the quality of goods and services; 2) attainment of schedule, and 3) the degree of any price differential.

2.0 Prior to developing tender specifications, Manitoba Hydro will endeavour to identify for each contract, possible opportunities for Northern Native, Northern and Manitoba businesses. Consideration will be given where reasonable and practical to scoping project activities so as to create contract packages which are suited especially for these companies, provided that in doing so:

- 2.1 There is no adverse effect on project schedules or the quality of the delivered product or project, and
- 2.2 For northern native companies the total cost of the re-scoped contract packages does not increase beyond ten percent of that anticipated by application of standard procurement methods.
- 2.3 For northern Manitoba business the total cost of the re-scoped contract packages does not increase beyond 5% of that anticipated by application of standard procurement.

3.0 In addition, where feasible, Manitoba Hydro will employ tendering methods such as the following to encourage Manitoba, northern native and northern Manitoba companies' participation in Hydro works:

- 3.1 Open bidding with Manitoba content requirements (as set out in Section 6 of these guidelines).
  - 3.2 Tender calls restricted to Northern Manitoba (as defined by the Department of Northern Affairs Boundary).
  - 3.3 Tender calls restricted to Northern Native businesses.
  - 3.4 Negotiated contracts.
- 4.0 Pursuant to 3.3 and 3.4 Manitoba Hydro will:
- 4.1 Target Northern Native participation through either of two alternatives as follows:
    - 4.1.1 In geographic areas where there are a number of native companies already established, invite bids from the native companies on a pre-qualified invitational basis.
    - 4.1.2 In geographic areas where only one native company is established, invite that company to submit a proposal and seeks to negotiate and acceptable contractual agreement.

In either situation, award a contract provided that the native company can undertake the work for a price which is within twenty percent of the detailed estimates, or, where comparative tender prices for work of similar nature in the same locale are available, for a price which is within twenty percent of the market price. Pursuant to 2.2, this 20% project activity premium shall be included within the overall 10% contract package guidelines.

- 4.2 Provide information to communities with respect to project plans as early as possible to give native companies adequate time to respond to a project opportunity.
  - 4.3 Provide contract specialists (either staff or consultants) to work with native managers and assist them in interpreting specification requirements, bidding procedures and provide field assistance in managing critical path activities.
  - 4.4 Cooperate with Government agencies to coordinate capital project planning with a view to sequencing work in order to promote longer term viability for native construction companies.
  - 4.5 Support native business development through membership in associations organized to foster the development of management skills and neutralize barriers to native participation in business opportunities which arise from the Corporation's projects.
- 5.0 Manitoba Hydro's application of the Buy Manitoba preference program will apply for all purchasing. This program will be expanded to incorporate all "Manitoba - based" companies such as assemblers, warehousers and distributors rather than the existing Manitoba manufacturers only. "Manitoba based" will be defined as companies which:
- 5.1 are registered to do business in the Province of Manitoba.
  - 5.2 maintains in Manitoba on a continuous basis, the facilities, equipment and staff necessary to carry out the type of work required, of manufacture/assemble

warehouse or distribute the products/materials concerned.

The Department of Industry, Trade and Technology will assist in assessing whether a company is "Manitoba based" upon request of Manitoba Hydro.

No published price preference will be used. The Corporation's existing practice does allow, however, for awarding contracts to a supplier with a higher Manitoba content where there is a marginal price differential between theirs and the lower bid.

6.0 Tender documents will include Northern Native, Northern and Manitoba content objectives, requirements and conditions as follows:

6.1 In order to ensure suppliers search out Manitoba and Northern sources, the tendering documents will indicate that maximization of Native, Northern and Manitoba contractors and suppliers involvement is a Manitoba Hydro objective and will be a consideration in the award of contracts. Tenderers will be expected to provide Manitoba benefits as set out in the tender documents.

6.2 In order to assist suppliers in determining the relative importance of content requirements, the tendering documents will define business as follows:

Manitoba businesses are those registered to do business in Manitoba and who maintain on a continuous basis the facilities, staff and equipment necessary to carry out the work required or manufacture/assemble warehouse or distribute the products or equipment concerned.

Northern businesses are those located and operating in the northern region as defined by the Department of Northern Affairs Boundary.

Native businesses will be defined as those owned and operated by Native residents of Northern Manitoba.

Tenderers will be advised that in the evaluation of content, priority will be given to Native business involvement, followed by Northern business involvement, and finally Manitoba business involvement.

6.3 When assessing Manitoba benefits, Manitoba Hydro will assess those benefits in terms of economic contribution. In evaluating economic contribution, consideration will be given to such factors as number of employees, asset size, the business nature of the company (i.e. manufacturer, assembler or distributor) and geographic location with the Province. The Industry, Trade and Technology Department will assist Manitoba Hydro in Making these evaluations, upon request.

6.4 Tender documents will include the following:

- 6.4.1 A list of all phases of the work that will be subcontracted along with the names and addresses of proposed subcontractors.
- 6.4.2 A list of major materials/equipment to be purchased along with the names and addresses of proposed suppliers.

6.4.3 A list of Northern Native and Manitoba companies acceptable to the tenderer who have submitted bids but were not selected by the tenderer but which are capable of supplying the goods or providing a service. Supply from these sources will be included as an incremental price for the same goods and services. Manitoba Hydro can exercise discretion in awarding a contract on the basis of the base price with selected items from the alternative Manitoba sources as set out in the Manitoba suppliers list. Supply from these sources shall be included as an additional cost in the tender.

6.5 In addition, tenderers will be invited to set out in writing all aspects of the work or services which are to be done or supplied by Northern Native, Northern or Manitoba sources as well as purchasing policies and objectives that will apply during execution of the contract. In any post-tendering pre-contract discussions, detailed inquiries will be made as to the use of Manitoba components and services.

6.6 Manitoba Hydro will monitor all contracted Manitoba and Northern Native content purchases for compliance to the original bid. Compliance procedures will be outlined in the tender documents.

7.0 Copies of actual tenders will be referred to the Chairperson of the Purchasing Committee in circumstances where the supply of goods or services by a Manitoba supplier would be satisfactory other than with respect to price, and where Manitoba Hydro would consider differentials too great to be justified. The Chairperson in conjunction with Industry,



Trade and Technology officials would evaluate and recommend to the ERIC/Jobs Fund whether the tender or portions of the tender be accepted at the higher price.

- 8.0 Manitoba Hydro will identify, and claim through the ERIC/Job Fund, incremental costs associated with contract sizing and the preferential program, beyond the unpublished by Manitoba price preference, the 10% native company premium or the 5% northern company premium.
- 9.0 A report, which will include the costs to the Corporation of implementing these guidelines the numbers of businesses and people assisted and an evaluation of the effectiveness of the program in achieving the desired objectives, shall be submitted to the Board monthly.

**APPENDIX I**

ONTARIO HYDRO STRATEGY IMPLEMENTATION - D.S.P.S.

**TABLE 1**  
**STRATEGY IMPLEMENTATION - MOST LIKELY LOAD GROWTH**

| <u>Committed Additions</u>                                 | <u>MW</u>    |
|------------------------------------------------------------|--------------|
| Darlington (1988-1992)                                     | 3524         |
| <u>Existing System - Maintenance &amp; Improvements</u>    |              |
| Lakeview - life extension of 10 or more years<br>(by 1996) | 2400         |
| Lennox return to service                                   | 2200         |
| FGD control retrofit * (1994-2002)                         | 3000-8000    |
| Other Rehabilitations                                      | As Necessary |

---

New Resources by 2000 \*\*

|                                       |          |
|---------------------------------------|----------|
| Efficiency Improvements               | 400-2250 |
| - more efficient motors               |          |
| - commercial lighting                 |          |
| - heat pumps                          |          |
| - mechanical vapour recompression     |          |
| Load Shifting                         | 500-1000 |
| - time-of-use rates                   |          |
| - thermal energy storage              |          |
| Independent Generation                | 300-1000 |
| Hydraulic                             |          |
| . Little Jackfish (1995)              | 129      |
| . Mattagami Redevelopment (1994-1966) | 398      |
| . Niagara Redevelopment (1998)        | 540      |
| . Other                               | 0-200    |

Total New Resources Required by 2000

|                                    |          |
|------------------------------------|----------|
| Dependable Capability:             | 2,600 MW |
| Approximate Generation Equivalent: | 3,200 MW |

Additional Resources by 2010 \*\*

|                                    |           |
|------------------------------------|-----------|
| Efficiency Improvements            | 200-750   |
| Load Shifting                      | 300-500   |
| Independent Generation             | 200-440   |
| Hydraulic                          | 600-1000  |
| Lakeview - Further Rehabilitation  | 0-2400    |
| Additional Base Load Energy Supply | 1000-5000 |

Total New Resources Required from 2000-2010

|                                    |          |
|------------------------------------|----------|
| Dependable Capability:             | 5,400 MW |
| Approximate Generation Equivalent: | 6,700 MW |

---

\* Or equivalent. The emission control improvements do not add to capacity but allow existing fossil capacity to be more fully used.

\*\* The MW values for new resources by 2000 and additional resources by 2010 should not be added to derive an estimated range of total planned resources. The reason for this is illustrated by example: if the upper range of efficiency improvements is achieved, it is likely that some of the hydraulic developments would be deferred.

**TABLE 2****STRATEGY IMPLEMENTATION - UPPER LOAD GROWTH SCENARIO \***

| <u>Committed Additions</u>                              | <u>MW</u>    |
|---------------------------------------------------------|--------------|
| Darlington (1988-1992)                                  | 3524         |
| <u>Existing System - Maintenance &amp; Improvements</u> |              |
| Lakeview - 10-year life extension (by 1996)             | 2400         |
| Lennox return to service                                | 2200         |
| FGD control retrofit (1994-1999) **                     | 6000-8000    |
| Hearn & Keith Rehabilitations                           | 1600         |
| Other Rehabilitations                                   | As necessary |

New Resources by 2000 \*\*\*

|                                        |            |
|----------------------------------------|------------|
| Efficiency Improvements                | 600-25000  |
| - more efficient motors                |            |
| - commercial lighting                  |            |
| - heat pumps                           |            |
| - mechanical vapour recompression      |            |
| Load Shifting                          | 500-1500   |
| - time-of-use rates                    |            |
| - thermal energy storage               |            |
| Independent Generation                 |            |
| Hydraulic                              | up to 1000 |
| . Little Jackfish (1994)               | 129        |
| . Mattagami Redevelopments (1994-1996) | 398        |
| . Niagara Redevelopment (1998)         | 540        |
| . Other                                | 600        |
| Additional Base Load Energy Supply     | 500-1000   |

Total New Resources Required by 2000

|                                    |           |
|------------------------------------|-----------|
| Dependable Capability:             | 9,300 MW  |
| Approximate Generation Equivalent: | 11,500 MW |



Additional Resources by 2010 \*\*\*

|                                    |              |
|------------------------------------|--------------|
| Efficiency Improvements            | 400-1400     |
| Load Shifting                      | 400-1000     |
| Independent Generation             | 200          |
| Hydraulic                          | 600          |
| Lakeview - Further Rehabilitation  | 2400         |
| Additional Base Load Energy Supply | 9,000-12,000 |

Total New Resources Required from 2000-2010

|                                   |           |
|-----------------------------------|-----------|
| Dependable Capability:            | 12,700 MW |
| Approximate Generation Equivalent | 15,700 MW |

Deficit/Purchase

The above options for new resources and additional resources are insufficient to meet the load between 1996 and 2001. The maximum deficit would be about 2000-4000 MW. This deficit cannot be met with the above options due to lead time constraints. The imbalance between demand and supply would result in a temporary decline in reliability, or could be mitigated by higher cost demand management options or by a major purchase.

\* High growth recognized in 1991

\*\* Or equivalent. The emission control improvements do not add to capacity but allow existing fossil capacity to be more fully used.

\*\*\* The MW values for new resources by 2000 and additional resources by 2010 should not be added to derive an estimated range of total planned resources. The reason for this is illustrated by example: if the upper range of efficiency improvements is achieved, it is likely that some of the additional base load energy supply would be deferred.

**TABLE 3****STRATEGY IMPLEMENTATION - LOWER LOAD GROWTH SCENARIO \***

|                                                         |                     |   |
|---------------------------------------------------------|---------------------|---|
| <u>Committed Additions</u>                              | <u>MW</u>           |   |
| Darlington (1988-1992)                                  | 3524                |   |
| <u>Existing System - Maintenance &amp; Improvements</u> |                     |   |
| Lakeview                                                | mothball **         |   |
| FGD Control Retrofit                                    | none                |   |
| Hearn, Keith & Lennox                                   | remain mothballed** |   |
| <hr/>                                                   |                     |   |
| <u>New Resources by 2000</u>                            |                     |   |
| Efficiency Improvements                                 | 20-100 ***          |   |
| Load Shifting                                           | 500-900             |   |
| Independent Generation                                  | 1-150               |   |
| Hydraulic                                               |                     |   |
| . Little Jackfish (1995)                                | 129                 |   |
| . Niagara Redevelopment (1998)                          | 540                 |   |
| Total New Resources Required by 2000                    |                     | 0 |
| <hr/>                                                   |                     |   |
| <u>Additional Resources by 2010</u>                     |                     |   |
| Efficiency Improvements                                 | ***                 |   |
| Load Shifting                                           | 0                   |   |
| Independent Generation                                  | 0-125               |   |
| Total New Resources Required from 2000-2010             |                     | 0 |

\* Lower load growth recognized in 1991

\*\* Subject to operability of the BES.

\*\*\* Not required for system reliability. Efficiency programs would likely continue, but the level of incentives that could be offered would be reduced and the MW impact would likely be negated by load building programs.

**TABLE 4**  
**SHORT-TERM WORK PROGRAM**

| Type of Work                |                                                 | Time Period | To enable in service by:    |
|-----------------------------|-------------------------------------------------|-------------|-----------------------------|
| <u>Committed Additions</u>  |                                                 |             |                             |
| Darlington NGS              | - Construction                                  | to 1992     | 1988-1992                   |
| <u>Existing System</u>      |                                                 |             |                             |
| Lakeview                    | - Life Extension Inspection                     | 1986-1988   |                             |
|                             | - Life Extension Work                           | 1989-1993   |                             |
| Lennox, Hearn, Keith        | - Maintain in mothballs                         | ongoing     |                             |
| FDG Scrubbers               | - Concept work & EA                             | 1986 -      | As required                 |
|                             | - Specification                                 | 1988 -      | (earliest 1994)             |
| <u>New Resources</u>        |                                                 |             |                             |
| Efficiency Improvements     | - Research, Development & Market Demonstrations | ongoing     | 1990-onward                 |
|                             | - Actual Programs                               | ongoing     |                             |
| Load Shifting               | - Research, Development & Market Demonstrations | ongoing     | 1990-onward                 |
|                             | - Implement Time of Use rates                   | 1989/90     |                             |
| Independent Generation      | - Demonstrations                                |             | 1990-onward                 |
|                             | - Negotiations                                  | 1987-89     | 1990-onward                 |
| Hydraulic                   |                                                 |             |                             |
| - Little Jackfish           | - EA Process                                    | 1986-89     | 1994                        |
| - Mattagami                 | - EA Process                                    | 1986-89     | 1984-1996                   |
| - Niagara                   | - Concept Work                                  | 1987 -88    |                             |
|                             | - EA Process                                    | 1988-91     | 1998                        |
| Additional Base Load Energy |                                                 |             |                             |
| - Coal and Nuclear          | - Concept * EA                                  | to 1992     | As required (earliest 2001) |
| - Purchases                 | - Negotiations                                  | ongoing     | As required (earliest 1997) |

APPENDIX J

LIST OF PERSONS INTERVIEWED

**LIST ON PERSONS INTERVIEWED**

**Ministry of Energy**

Dan Ganier  
Deputy Minister

George R. Davies  
Executive Co-ordinator

Rick Jennings  
Policy Advisor, Energy Forecasts

Nizar H. Jiwan  
Senior Policy Advisor

George Dominy  
Manager, Finance, Rates and Utilization Section

Andrew Frame  
Senior Advisor - Utilities

**Ministry of Northern Development and Mines**

William W. Stevenson  
Director, Corporate Planning Secretariat

Israel Lyon  
Senior Policy Advisor

John B. Gammon  
Director, Mineral Development and Lands Branch

**Ministry of Treasury and Economics**

Barry MacFarlane  
Senior Policy Advisor  
Sectoral and Regional Policy Branch



Ontario Hydro

Robert Franklin  
Chairman and President

Larry Leonoff  
General Counsel and Secretary

Arvo Niitenberg  
Senior Vice-President, Operations

Bill Morison  
Vice-President, Production

Al Holt  
Vice-President, Supply and Services

Norm Simon  
Vice-President, Corporate Relations

Rod Taylor  
Manager  
Corporate Relations Strategic Planning

Don Henderson  
Director, New Business Ventures

Dudley Palmer  
Manager, Rates